

ALBERT R. MANN
LIBRARY

NEW YORK STATE COLLEGES
OF
AGRICULTURE AND HOME ECONOMICS



AT

CORNELL UNIVERSITY

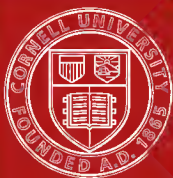
Cornell University Library
SB 321.B85

The american kitchen-gardener.



3 1924 000 336 432

mann



Cornell University
Library

The original of this book is in
the Cornell University Library.

There are no known copyright restrictions in
the United States on the use of the text.

THE
AMERICAN
KITCHEN-GARDENER,

CONTAINING

COMPLETE PRACTICAL DIRECTIONS

FOR THE CULTIVATION OF

CULINARY VEGETABLES AND HERBS,

TOGETHER WITH INSTRUCTIONS FOR

FORCING OR FORWARDING VEGETABLES OUT OF THE
ORDINARY SEASON.

BY THOMAS BRIDGEMAN,
Gardener, Seedsman, and Florist.

NEW EDITION: REVISED, ENLARGED, AND ILLUSTRATED.

NEW YORK:
WILLIAM WOOD & CO., 61 WALKER STREET.
1867.

Entered according to Act of Congress, in the year 1866, by
ALFRED BRIDGEMAN,
In the Clerk's Office of the District Court of the United States for the Southern Dis-
trict of New York.

THE NEW YORK PRINTING CO.,
81, 83, and 85 Centre Street,
NEW YORK.

P R E F A C E .

THE primary object in first publishing THE YOUNG GARDENER'S ASSISTANT, was to enable our respectable seedsmen, while furnishing a catalogue of seed for the use of the Kitchen and Flower Garden, to afford instruction, at a trifling expense, to such of their customers as had not a regular gardener, and thereby save themselves the blame, of those who may not have given their seed a fair trial for want of knowing how to dispose of it, in the ground.

The Author, having shown his primary object in adopting the catalogue form, presumes that his readers will not be disappointed if they do not find there the names of all the species or varieties of plants they may wish to introduce into their gardens, the mode of culture of such being generally alike. If a catalogue of this kind was essential, it would occupy more space than is allotted to this book; besides, it would be impossible to keep pace with our enterprising horticulturists and florists, who are continually introducing new species into

our country. When, also, it is considered that there are a number of indigenous plants at present unknown to us, it will appear evident that the most extensive catalogue would not be perfect in this respect for any length of time; the Author, therefore, thought it unnecessary to attempt anything more than is essential to the attainment of a tolerable share of the products of the garden, by ordinary exertion. How far he has succeeded in this respect, must be left for the reader to decide.

THOMAS BRIDGEMAN.

KITCHEN-GARDENING.

CHAPTER I.

GENERAL REMARKS ON KITCHEN-GARDENING.

PREVIOUS to preparing a kitchen-garden, the gardener should provide a blank-book, and prepare a map of his ground, on which he should first lay out a plan of his garden, allotting a place for all the different kinds of vegetables he intends to cultivate. As he proceeds in the business of planting his grounds, if he should keep an account of everything he does relative to his garden, he would soon obtain some knowledge of the art. This the writer has done for more than twenty years, and he flatters himself that a publication of the results of his practice will be interesting and useful to his readers.

If gardeners would accustom themselves to record the dates and particulars of their transactions relative to tillage, planting, etc., they would always know when to expect their seed to come up, and how to regulate their crops for succession; and when it is considered that plants of the *brassica*, or Cabbage tribe, are apt to get infected at the roots, if too frequently planted in the same ground, and that a rotation of crops in general is beneficial, it will appear evident that a complete register of everything relative to culture is as essential to success in the kitchen-garden as in agriculture proper.

Those who have not a garden already formed, and cannot avail themselves of such a slope of ground or quality of soil as they desire, must take up with such as may be within their reach. If practicable, a kitchen-garden should have a warm and south-easterly exposure. But when the ground slopes to

the north and west, as is frequently the case, it is important to have the garden located on the sunny side of a grove, forest, or out-buildings. Every person, previous to choosing a location for out-buildings and a dwelling-house, should select the most desirable situation for the kitchen-garden.

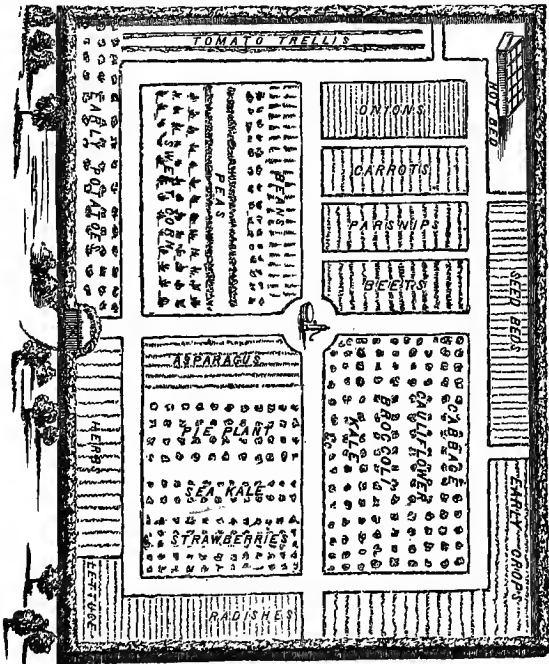
LAYING OUT THE GROUND.

If desirable, a border may be formed around the whole garden, from five to ten feet wide, according to the size of the piece of land. Next to this border, a walk may be made from three to six feet wide; and the middle of the garden may be divided into squares, on the sides of which a border may be laid out three or four feet wide, in which the various kinds of herbs may be raised, and also gooseberries, currants, raspberries, strawberries, etc. The centre beds may be planted with various kinds of vegetables. The outside borders will be useful for raising the earliest fruits and vegetables, and serve for raising and pricking out such young plants, herbs, and cuttings, as require to be screened from the intense heat of the sun.

The mode of laying out the ground is a matter of taste, and may be left to the gardener himself, the form being a thing of trifling importance in the production of useful vegetables; and it matters not whether the ground be laid out in beds of four or ten feet wide, provided it be well worked, and the garden kept neat and free from weeds. One should determine what kind of vegetables he designs to raise as well as the quantity of each kind. If the object be simply to supply one family with vegetables, it is better to appropriate only a small plot of ground to this purpose, as a large garden at a distance from a good market is not always a source of profit, while it requires a great deal of labor to keep it in order. It is far better to have a small plot of ground of only a few square rods thoroughly pulverized, well manured, and properly dressed, than one twice as large, and all these things alluded to, only half done. Very many persons in the country, who raise no garden produce for

market, err greatly in laying out gardens much larger than they cultivate profitably.

All standard trees should be excluded from a kitchen-garden, as their roots spread so widely, and imbibe so much moisture from the ground, that little is left for the nourishment of any plant within the range of their influence; and when in full leaf, they shade a large space, and obstruct the free circulation of the air, so essential to the well-being of all plants. Moreover, the droppings from some trees are particularly injurious to whatever vegetation they fall upon. When any plants require a shade it is infinitely better to make a temporary protection with wide boards placed on stones, or billets of wood, than to attempt to plant in the shade of trees. In the absence of wide boards for screening plants from the intense heat of the sun, two or more narrow boards may be placed side by side.



ARRANGEMENT OF THE GARDEN.

The cut herewith given, represents a very satisfactory manner of disposing of different kinds of plants and vegetables in the kitchen-garden. The illustration requires no explanation. The arrangement can be varied to suit the fancy or convenience.

MANURE.—HOW APPLIED.

One important point to be attended to, is to have a supply of good, well-rotted manure ready to incorporate with the soil; and also a portion of ashes, soot, tobacco-dust, and lime, for the purpose of sowing over seed-beds in dry weather, to destroy insects, which sometimes cut off young plants as fast as they come up.

If the ground cannot be all manured every year, as it should be, it is of primary importance that those vegetables be provided for which most need manure. A perusal of the catalogue will enable the young gardener to judge of the kinds of garden products which require it most. Good, rich manure is indispensably necessary for the production of Broccoli, Cauliflower, Cabbage, Lettuce, Spinach, Onions, Radishes, and Salads in general.

In the event of a scanty supply of manure, those kinds of vegetables which are raised in hills or drills, may be manured immediately under the seed or plants by applying a light dressing before the seed is dropped, being careful to cover it with soil, so that the seed may not come in immediate contact with stimulating fertilizers.

As some cultivators, by their method of using manure, show that they have very erroneous ideas as to its real object or utility, I would remind them that manure should be employed with a view to renovate and strengthen the natural soil, and not as a receptacle for seed. In order that manure may have a salutary effect, it should be thoroughly incorporated with the earth by the operation of digging or ploughing. When it is used in hills or on a given spot, it should be well pulverized

and mixed with the earth so as to form a compost. These remarks apply especially to strong animal manures, the excrements of fowls, as also to soaper's, tanner's and glue manufacturer's manure, rags, etc. Lime, ashes, bone-dust, poudrette, urate, salt, sulphur, gypsum, nitrate of potash, and other portable manures, may be sown broadcast over the land previous to harrowing or raking it, or such manures may be formed into a compost when used in hills or drills. They should in every case be used with caution, as an indiscreet use of them will destroy the seed or plants, and thus defeat the cultivator's object. Many gardeners can corroborate these facts, from having used strong compost as a mould for their hotbeds, thereby poisoning the germs of the seed, and causing the plants to die off prematurely; and it is notorious that a great proportion of failing crops is occasioned by an injudicious mode of using manure.

IMPROVING POOR SOILS.

Much depends on the manures used on particular kinds of soil. The great art of improving sandy and clayey soils consists in giving the former such dressings of clay, cow-dung, and other kinds of manure, as will have a tendency to bind and make them more compact, and consequently more retentive of moisture; and to the latter, coats of horse-dung, ashes, sand, and such other composts as may tend to separate the particles and open the pores of the clay, so as to cause it to approach as nearly as possible to a loam.

SALTPETRE AS A FERTILIZER.

Saltpetre is pernicious to many species of insects; it is also an excellent manure, and may be used to great advantage when dissolved in the proportion of one pound to four gallons of water. This liquid, applied to plants through the rose of a watering-pot, will preserve health and vigor. Soapsuds are equally beneficial, if used occasionally in the same manner—say once a week. These remedies, applied alternately, have

been known to preserve melon and cucumber-vines from the ravages of the yellow-fly, bugs, blight, etc., and to keep the plants in a thriving condition.

REPELLING INSECTS.

As liquid, however, cannot be conveniently used on a large piece of land, it may be necessary, if insects are numerous, to sow tobacco-dust, mixed with road-dust, soot, ashes, lime, or the dust of charcoal, in the proportion of half a bushel per acre every morning, until the plants are free or secure from their attacks.

It is necessary that the gardener should have a hogshead set in the ground always at hand in dry weather, containing solutions made of waste tobacco, lime, soot, cow-dung, elder, burdock leaves, etc. A portion of these ingredients, or any other preparation that is pernicious or poisonous to insects, without injuring the plants, thrown into a hogshead kept filled up with water, if used moderately over beds of young plants in dry weather, would, in almost every case, insure a successful crop. Such liquid, however, should never be used when the sun shines; and if applied too abundantly to the leaves, there is danger, sometimes, that the leaves and stems will be destroyed.

Manure should be applied to the most profitable and exhausting crops; and the succession of crops should be so arranged that the ground may be occupied by plants either valuable in themselves, or which may contribute to the increased value of those which are to follow; and the value of the labor required to mature vegetables and prepare them for market, should be always taken into consideration.

VALUE OF PEAT ASHES.

The farmers of Europe consider peat ashes of more value than any others; and I am persuaded that, could they be fairly tested by some of our best cultivators, great good would result to the community. If the farmers in England can afford

to keep men under pay, perpetually burning peat for the sake of the ashes, it is natural to suppose that the poor of our community may be placed in easier circumstances, as respects the article of fuel. Thousands of acres of land are to be found in the States of New York and New Jersey, and within a few miles of this city, which abound with peat earth; and the owners of such have already begun to explore their treasures of this description. Good peat burns well in all sorts of stoves and grates, whether made for wood or coal, and also on the hearth; and if the ashes are not used to any better purpose than other ashes have hitherto been, it is the cheapest fuel known. I am persuaded that this subject is worthy of serious consideration; and if the editors of the different papers would arouse the public attention, so as to direct some of our most active citizens to a consideration of this subject, incalculable good would result to the community at large.

PREPARATION OF THE SOIL.

A light, sandy soil will be benefited if worked when moist, as such treatment will have a tendency to make it more compact; on the contrary, if a clayey soil be worked when too wet, it kneads like dough, and never fails to bind when drought follows; and this not only prevents the seed from rising, but injures the plants materially in their subsequent growth, by its becoming impervious to moderate rains, dews, air, and the influence of the sun, all of which are necessary to the promotion of vegetation.

The nearer the ground approaches to a sandy soil, the less retentive will it be of moisture; the more to a clayey, the longer will it retain moisture; and the finer the particles of which the clay is composed, the more retentive will it be of water, and, consequently, the longer in drying, and the harder when dry. But earth of a consistence that will hold water the longest, *without becoming hard when dry*, is, of all others, the best adapted for raising the generality of plants in the greatest perfection. This last described soil is called loam,

and is a medium earth, between the extremes of clay and sand.

Many gardens can never be brought into a state of great productiveness on account of an excess of water in the soil. If the soil be heavy, and continues wet and heavy in the spring, let it be drained at once. After this, plough deep, pulverize thoroughly, manure highly, keep the weeds subdued, and in a few years you will have a garden that will produce anything that will grow in your locality. If the soil is heavy, haul on muck, sawdust, chip manure, in great abundance; and when such substances decay, the soil will be light, mellow, and productive.

ROTATION OF CROPS.

Perhaps the next important point to be attended to is the most proper rotation of crops. Virgil, who was a philosopher as well as a poet, very justly observes, that "THE TRUE REPOSE OF THE EARTH IS A CHANGE OF ITS PRODUCTIONS."

It is a curious fact, that a plant may be killed by the poison which it has itself secreted, as a viper may be destroyed by its own venom. Hence it has been very generally noticed, that the soil in which some particular vegetables have grown, and into which they have discharged the excretions of their roots, is rendered noxious to the prosperity of plants of the same or allied species, though it be well adapted to the growth and support of other distinct species of vegetables.

It is proved by experience, that fall Spinach is an excellent preparative for Beets, Carrots, Radishes, Salsify, and all other tap, as well as tuberous-rooted vegetables.

Celery or Potatoes constitute a suitable preparative for Cabbage, Cauliflower, and all other plants of the *Brassica* tribe; as also Artichokes, Asparagus, Lettuce, and Onions, provided such ground be well situated, which is a circumstance always to be duly considered in laying out a garden.

Lands that have long lain in pasture are, for the first three or four years after being tilled, superior for Cabbage, Turnips,

Potatoes, etc., and afterwards for culinary vegetables in general.

The following rules are subjoined for further government :

Fibrous-rooted plants may be alternated with tap or tuberous-rooted, and *vice versa*.

Plants which produce luxuriant tops, so as to shade the land, should be succeeded by such as yield small tops or narrow leaves.

Those which, during their growth, require the operation of stirring the earth, should precede such as do not require cultivation.

Ground which has been occupied by Artichokes, Asparagus, Rhubarb, Sea Kale, or such other crops as remain long on a given spot, should be subjected to a regular rotation of crops for at least as long a period as it remained under such permanent crops. Hence in all gardens judiciously managed, the Strawberry-bed is changed every three or four years, till it has gone the circuit of all the compartments; and Asparagus-beds should be renewed, on the same principle, as often as they fail to produce luxuriantly. Indeed, no two crops should be allowed to ripen their seed in succession in the same soil, if it can be avoided; because, if its fertility be not exhausted by such crops, weeds will accumulate more than on beds frequently cultivated.

SEED AND SEEDING.

I am an advocate for early sowing and planting, even at the risk of losing a little seed, provided the ground be fit to receive it. Some gardeners, as well as some writers, recommend certain fixed days for sowing and planting particular kinds of seed; I think it necessary to guard my readers against being misled. The failure of crops may be often attributed to the observance of certain days for sowing. If some kinds of seed be sown when the ground is wet and cold, they will become chilled in the ground, and seldom vegetate. If they be sown in very dry weather, the germinative parts of the seed may become injured by the burning rays of the sun, or the young

plants may get devoured by insects as fast as they come up. To obviate these difficulties, I have generally allowed a week or ten days for sowing the seed, intending the medium as the proper time for the vicinity of New York. With this clearly borne in mind, the reader who observes the difference in the degrees of heat and cold in the different parts of the country, will know how to apply these instructions accordingly.

PLANTING IN DRILLS.

I have, in most cases, recommended drills to be made at certain depths for the different kinds of seed; and when I have stated that the drills should be two inches deep, it is intended that the seed should be covered only one inch, which it will be when planted in these drills and covered; and so in proportion for any other depth required. This may serve as a guide to the young gardener; but circumstances alter cases. If, for instance, some particular crops should fail, this would render it necessary, if the season be far advanced, to risk a further planting of seed, even if the weather be hot and the ground dry. If this be planted a little deeper, it may escape the violent heat of the sun, and in the event of a shower, the ground would become sufficiently moist to bring it up; whereas it sometimes happens that seed sown after a shower does not vegetate until after the season is too far advanced to bring the crop to perfection.

The work of drilling by those who have no machine, may be performed in various ways; in some cases a plough is used, in others a small hoe, or a dibble drawn along the edge of a board or line. It is of little consequence which way the work is done, if it be well done. While I leave the gardener to make his own choice of tools, I would suggest that he be provided with two or three drilling machines; these, every handy man can make for himself; they should be in the form of a garden-rake, with a stout, heavy back, and five teeth, about two inches broad, and tapered so as to enter the ground and leave drills two inches deep. If one be made with the teeth eight inches apart, another twelve, and another fourteen, they will be useful in

making drills for the various kinds of seed; and drills thus made serve instead of straining a line when transplanting Cabbage, Lettuce, Leek plants, etc.; the line being stretched at one edge of the bed, and the drilling machine drawn straight by the line, makes five drills at once. If they are straight, they may be kept so, by keeping one drill open for the outside tooth to work in, until the ground be all drilled.

Gardeners practise different methods of covering up seed; some do it with a hoe, others with a rake or harrow; some draw a portion of the earth to the side of the bed, and after sowing the seed, return it regularly over the bed; in some particular cases a sieve is used, in others a roller. Rolling or treading in seed is necessary in dry seasons; but it should never be done when the ground is wet.

Many kinds of seed, such as Asparagus, Capsicum, Celery, Feticus, Leek, Lettuce, Onion, Parsnip, Parsley, Rhubarb, Salsify, Spinach, etc., will not vegetate freely in dry weather unless the ground be watered or rolled. Where there is no roller on the premises, the following contrivance may answer for small beds as a substitute: after the seed is sown, and the ground well raked, take a board the whole length of the bed, lay it flat on the ground, begin at one edge of the bed, and walk the whole length of it; this will press the soil on the seed; then shift the board till you have gone over the whole bed. In the absence of boards, tread in the seed with your feet, or strike on the bed with the back of your spade or shovel; but this should not be done when the ground is wet.

If it be necessary at any time to sow seed in extremely dry weather, it is recommended to soak the seed in water, and dry it with sulphur. This practice, with attentive watering, will cause the seed to vegetate speedily.

I have, in most cases, recommended seed to be sown in drills drawn from eight to twelve inches apart, in preference to sowing broadcast; because the weeds can be more easily destroyed by means of a small hoe, which, if properly used, greatly promotes the growth of young plants.

If it should be requisite to transplant anything when the ground is dry, the transplanting should always be done as soon as the earth is turned over; and the roots of the plants, before they are set out, should be steeped in mud made of rich compost.

TABLE SHOWING THE NUMBER OF PLANTS ON AN ACRE.

The following table shows the number of plants or trees that may be raised on an acre of ground, when planted at certain distances apart:—

Distance apart.	No. of Plants.	Distance apart.	No. of Plants.
1 foot	43,560	9 feet	537
1½ feet	19,360	12 feet	302
2 feet	10,890	15 feet	193
2½ feet	6,969	18 feet	134
3 feet	4,840	21 feet	98
4 feet	2,722	24 feet	75
5 feet	1,742	27 feet	59
6 feet	1,210	30 feet	48

The preceding table may serve as a guide to such as are not expert in arithmetic, in laying out a garden, as it shows at one view many proportions of an acre of land, in squares of different dimensions. The last line, for instance, shows that, if forty-eight trees be planted on an acre, each thirty feet apart, there may be forty-eight beds of thirty feet square, or thirty beds of forty-eight feet square, formed from the same quantity of land. An allowance of about one-eighth must, however, be made from the above calculation for walks and paths.

DISTRIBUTION OF MANURE.

The table may also serve to show the gardener how to dispose of any given quantity of manure, that may be allotted for an acre of ground. If, for instance it requires three hundred and two trees to plant an acre when placed twelve feet from each other, it will require as many heaps of manure to cover the same quantity of ground, if dropped the same dis-

tance apart. It therefore follows, that if one hundred loads be allowed to the acre, each load must be divided into three heaps. If seventy-five loads only be allowed, every load must be divided into four heaps, and so on in proportion to the quantity allowed. But if the gardener should choose to drop his heaps five paces, or fifteen feet apart, he may make such distribution of his loads as to have one hundred and ninety-three heaps on the acre of land; in which case, by dividing each load into four heaps, he will require only forty-eight loads to cover the acre, and he may decrease the quantity still more, by allowing greater distances from heap to heap, or by dividing his loads into smaller proportions, so as to accommodate himself to whatever quantity of manure he may allot to any given quantity of ground.

THE VITALITY OF SEEDS.

As it may not be generally known that some kinds of seed are apt to lose their vegetative qualities much sooner than others, the following hints are subjoined as some rule for the gardener's government, provided the seed is carefully preserved, and not exposed to excess of heat, air, or dampness:—

Parsnip, Rhubarb, and other light, scale-like seeds, cannot be safely trusted after they are a year old. Beans and Peas of different species, Capsicum, Carrot, Cress, Leek, Nasturtium, Okra, Onion, Salsify, Scorzonera, and small herb-seed in general, may be kept two years. Artichoke, Asparagus, Egg-plant, Endive, Feticus, Lettuce, Mustard, Parsley, Skirret, and Spinach-seed, may with care be preserved three years. Broccoli, Cauliflower, Cabbage, Celery, Kale, Radish, and Turnip-seed will keep four years, if properly attended to. Beet, Cucumber, Gourd, Melon, Pumpkin, and Squash; also Burnet, Chervil, and Sorrel-seed, have been known to grow freely when five, and even seven years old; but it is not prudent to venture seed in the garden, or any other place, when there are any apprehensions that any portion of it has lost its vitality by age, or in any other way.

In order to put such on their guard as may attempt to raise seed either for their own use or for the market, I would observe that great care is necessary; as it is an indubitable fact, that if seed of similar species be raised near each other, degeneracy will be the consequence. It is therefore difficult for any one man to raise all sorts of seed, good and true to their kind, in any one garden.

If roots of any kind become defective, they are unfit for seed, as the annexed fact will show. I once planted for seed some beautiful orange-colored roots of Carrots; but as they had been previously grown with some of a lemon-color, they produced seed of a mixed and spurious variety; and as this is not a solitary instance of degeneracy from the like cause, I have come to the conclusion that, as in the animal frame, so it is in the vegetable system—disorders frequently lie dormant from one generation to another, and at length break out with all their vigor. I would therefore advise seed-growers not to attempt to “bring a clean thing out of an unclean;” but if they find a mixture of varieties among their seed-roots, to reject the whole, or they will infallibly have spurious seed.

SEEDS OF STONE FRUIT.

If the seeds of the Apple, Pear, and Quince, and the pits of the Apricot, Cherry, Peach, and Plum, were not planted in autumn, let it be done as soon as the earth can be brought into tillable condition in the spring, because exposure to frost is usually essential to their vegetating, unless the shells are separated by some means, so that moisture can reach the germs. The chief object of exposing pits to frost is, simply to open the shell.

CAUSES OF FAILURE IN THE GERMINATION OF SEEDS.

As some gardeners attribute all failures of seed to germinate to its defectiveness, I shall offer a few observations to convince such persons of their error.

Seeds denominated hardy and half-hardy, are subject to risk in

unpropitious seasons, from unfitness of the soil to promote vegetation, rendered so by cold rains and variable weather. If sprouted seed survive a severe chill, it is the more susceptible of frost, to which it is frequently subjected early in the season. Some species of plants that, in an advanced stage of growth, will stand a hard winter, are often cut off by a slight frost while germinating, especially if exposed to the heat of the sun after a frosty night, or while in a frozen state. Cabbage, Carrot, Celery, Turnip, and many other growing plants, which survive the ordinary winters of England, are here classified as half-hardy, for the reasons above stated.

The most tender species of plants frequently perish from excess of rain. Lima Beans, for instance, have often to be replanted three or four times in the month of May before any will stand. Melons, Cucumbers, Egg-plants, Tomato plants, etc., are sometimes cut off by variableness of the weather. Those who plant tender things in open gardens early in the season, must reconcile themselves to loss in the event of unfavorable weather, instead of throwing blame on the seedsmen.

Such species and varieties as, from their nature, are apt to vegetate quickly, are very liable to be devoured by insects before they make any show on the surface. Turnip-seed, for instance, will sprout within forty-eight hours after being sown; and under favorable circumstances, most of the species of this class will come up within a week; but if insects attack the seed-beds in dry weather, a total loss of crops will be the consequence. Every experienced farmer is convinced of this fact, by having frequently to sow his Turnip-ground three or four times before he can get any to stand.

Sometimes a sudden shower of rain will cause plants to grow out of the reach of insects; but every good gardener should have his remedies at hand to apply to seed-beds in general, and especially to those in which plants are raised for the purpose of being transplanted. The seeds of some plants require from two to three or four weeks to vegetate in unfa-

vorable seasons. Some plants are retarded by cold, others by excess of dry weather; and at such times, seed may fail to vegetate for want of pressure. In the event of drought after heavy rains, seed and young plants often perish through incrustation of the soil, and from other untoward circumstances, which can neither be controlled nor accounted for, even by the most assiduous and precise gardener. It must, however, be conceded, that failures often occur through seed being deposited too deep in the ground, or left too near the surface. Sometimes, for want of sufficiency of seed in a given spot, solitary plants will perish, they not having sufficient strength to open the pores of the earth; and frequently injudicious management in manuring and preparing the soil will cause a failure.

I have been induced to expatiate, and to designate, in the *seventh range of the preceding table*, such plants as are generally cultivated first in seed-beds and afterwards transplanted for the purpose of being accommodated with space to mature in, with a view to answer at once the thousand and one questions asked by inexperienced cultivators.

QUANTITY OF SEED.

Some persons, from ignorance of the nature and object of raising plants for transplanting, ask for pounds of seed, when an ounce is amply sufficient for their purpose. For example, an ounce of Celery-seed will produce ten thousand plants. An ounce of Cabbage-seed will produce from three to four thousand; sufficient, when transplanted, to cover nearly half an acre of land—which land, if sown with spinach, for instance, would require from four to six pounds of seed.

TIME TO COMMENCE GARDENING.

The following directions for the management of a garden are founded on the results of practical experience in the vicinity of NEW YORK CITY, where the soil is generally susceptible of gardening operations towards the end of March. These direc-

tions may, however, be applied to all other parts of the UNITED STATES, by a *minute observance* of the difference in temperature. In the extreme northern parts of the State of New York, as well as in all other places similarly situated, the directions for the beginning of April will apply to the latter part of the same month, with very few exceptions. In our SOUTHERN STATES, the directions for APRIL, which may be considered as the first gardening month in the EASTERN, WESTERN, and MIDDLE STATES, will apply to January, February, or to whatever season gardening operations may commence in the respective States. In the *varied climates* of each particular State, if the same rule of application be pursued, success is certain.

FORCING VARIOUS KINDS OF VEGETABLES.

The following simple method of forcing vegetables on a small scale is recommended by a correspondent of a London magazine. The writer says :

“I obtain mushrooms in winter by a very simple process. Provide boxes three feet long, and one foot eight inches deep ; a quantity of horse-droppings, perfectly dry, some spawn, and some light dry soil. Fill the boxes by layers of droppings, spawn, and soil, which must be well trodden down. Repeat these triple layers till the boxes are full, and all trodden firmly together. Four such boxes at work are sufficient for a moderate demand ; and out of a dozen, four brought in at a time, and placed upon a flue of a greenhouse stove, will produce a fine supply. The surface of these portable beds may be covered with a little hay, and occasionally, though sparingly, watered. It is not absolutely necessary that they be set on the flue of a greenhouse ; a warm stable, cellar, or any other similar place, will suit equally well. This plan is also convenient for affording a plentiful stock of superior spawn.

“The same-sized boxes will also do for Asparagus ; but for this purpose a sufficient stock of three-year-old plants must be at hand ; also eighteen boxes, four of which are the necessary set to be forced at one time for one family. Half fill the boxes

with decayed tanner's bark, leaf-mould, or any similar mould; on this pack the roots as thickly as possible, and fill up the boxes with the bark, etc. Any place in a forcing-house will suit them where they can enjoy the necessary degree of heat. Besides Asparagus and Mushrooms, Sea-Kale, Buda-Kale, Angelica, small salad, and various potherbs may be raised in the same manner."

Those who have not the conveniences recommended in a greenhouse, may place the boxes in a hotbed. The glasses being laid on, and the beds covered at night, will soon promote the growth of the plants, and produce vegetable luxuries at a season when garden products in general are comparatively scarce.

It is unnecessary to show of how much value such processes may be in minor establishments, or in a new country. I wish it to be understood, that in order to the successful cultivation of some of the rare vegetables I have treated of, great pains must be taken in every stage of their growth. If the advice I have given be attended to, I flatter myself we shall soon obtain a supply of many of these luxuries of the garden. My directions are founded on the success attending the practice of some of the best gardeners in this country. I have also had sufficient experience to warrant me in this attempt to contribute my mite towards the attainment of this kind of useful knowledge.

HOTBEDS.

For the purpose of raising Mustard, Cress, and other salad-herbs, also Egg-plants, Tomato-plants, etc., in small quantities, a hotbed may be made early in the spring, of good heating materials, on the top of which may be laid leaf-mould, old tan, or light compost, to the depth of about nine inches. The various kinds of seed may be sown in boxes or flower-pots, and plunged in the top mould up to their rims, and by being well attended to, a supply of small salads, as well as small seedling-plants, may be raised without much labor or difficulty. This method is also well calculated for raising annual flower-plants at an early season.

ADAPTING PLANTS TO SOILS.

The various species of plants which occupy our greenhouses, gardens, and fields, *require each their peculiar aliment*—they having been collected from all the diversified regions, climates, and soils through earth's remotest bounds; they consequently comprise natives of mountains and rocks, as well as of plains, valleys, and watercourses. The most essential aliment for natives of warm climates and dry soils being HEAT, artificial means are used in cool seasons and unpropitious climates to produce it. Natives of temperate climates require salubrious air, hence they are cultivated to the greatest perfection in our Northern States in spring and autumn; and in our Southern States in the winter; and natives of humid climates, as also amphibious plants in general, require a more than ordinary share of MOISTURE, and grow best in wet soil; but these THREE ELEMENTS collectively constitute the food of plants in general, and should be judiciously imparted to the various species, in due proportions, according to circumstances. I have also shown that the roots of various species of plants require each their peculiar aliment, which is not to be found in all descriptions of land. This is demonstrated by roots of trees being frequently discovered spreading beyond their ordinary bounds in quest of salutary food.

DEEP PLANTING.

Although it has been admitted that excessive deep planting of trees and plants is injurious, and in many cases fatal to their very existence, it does not follow that *all* annuals and biennials are injured by the same means. On the contrary, the earthing up of particular species of plants in a late stage of growth is calculated to promote early maturity, which constitutes the most essential art in gardening for the market; because the earliest crops are always the most profitable. It is moreover a necessary practice in climates where the seasons for gardening are short—as without such practice, many kinds of vegetables

could not possibly be matured in due season for gathering before winter.

I would here take the opportunity of proving this last position, by reminding the reader that the effect of deep planting, in the Peach-tree for instance, is discoverable soon after the error is committed, by its fruit ripening prematurely, and this is often the case for a year or two prior to its final decease, and should operate as a salutary lesson against planting *perennial* plants and trees too deep. I would urge gardeners and cultivators to consult the operations of nature in all their rural pursuits; and with a view to aid them, I subjoin the following rules, which are further illustrated under the different heads:

1. In transplanting fruit-trees, let the collar, or that part from which emanate the main roots, be near the surface. A medium-sized tree may be planted an inch deeper than it was in the nursery bed; and the largest should not exceed two or three inches.

2. In the cultivation of such plants as are transplanted, or grown in hills or clusters, as Indian Corn, etc., keep the earth loose but level around them in their early stages of growth, by frequent hoeing, ploughing, or cultivating; and to promote early maturity, throw a moderate portion of earth about the roots and stems at the last or final dressing.

3. In the sowing of seed, remember that **IN UNITY THERE IS STRENGTH**, and that from the germinative parts of a seed being weak and diminutive, it cannot be expected to perforate through the soil solitary and alone. To insure a fair chance, plant your seed moderately thick, and thin out the surplus plants while young. In planting seed in drills, which is the most eligible plan, the size of the seed and strength of its germ should be considered. Large seed, producing vigorous roots, requires deeper planting than diminutive seed, producing delicate roots and slender stalks.

4. In the choice of compost for exotic or greenhouse plants, imitate the native soil of each peculiar species as nearly as

possible, by a judicious mixture of *maiden earth*, loam, sand, leaf, swamp, and rock mould, decomposed manures, and such other composts as are recommended under the different heads. Remember, that although strong manure is essential to the growth of some plants, it is poisonous to others. PURSUE, THEN, A MEDIUM COURSE. From your soil not being too stiff nor too light, too rich nor too poor, too cool nor too warm, too close nor too porous, if not positively salutary and congenial to all, it must render the situation of each endurable. I again repeat, that temperance in the use of aliment is as essential to the welfare of the vegetable family as it is to the health, happiness, and longevity of mankind.

MEANS FOR REPELLING INSECTS.

There is nothing that protects young crops of Turnips, Cabbage, and other small plants, from the depredations of the fly so well as rolling; for when the surface is rendered completely smooth, these insects are deprived of the harbor they would otherwise have under the clods and small lumps of earth. This method will be found more effectual than soaking the seed in any preparation, or dusting the plants with any composition whatever; but the roller must only be used previous to, or at the time of sowing the seed, and not when the soil is so moist that it will pack and bake, thus forming a crust on the surface of the ground, through which the young plants can never force their way.

Turnip-seed will sometimes sprout in forty-eight hours. Cabbage-seed ought to come up within a week after it is sown; but it sometimes happens that the whole is destroyed before a plant is seen above ground. The seedsman, in this case, is often blamed, but without cause.

A correspondent has communicated the result of an experiment he has tried for preventing the attacks of flies or fleas on Turnips. He says: "Steep your seed in a pint of warm water for two hours, in which is infused one ounce of saltpetre; then dry the seed, and add currier's oil sufficient to wet

the whole; after which mix it with plaster of Paris, so as to separate and render it fit for sowing."

As the truth of the old adage, that one ounce of prevention is of more value than a pound of cure, is very generally admitted, I would recommend the following method of preparing a bed for the purpose of raising Cabbage, Cauliflower, Broccoli, and such other plants as are subject to the attacks of insects: After digging or ploughing the ground in the usual way, collect any combustibles that are attainable, as dried weeds, sedge, turf, brushwood, leaves, stubble, corn-stalks, sawdust, or even litter from the dung-heap, which should be placed in heaps on the seed-beds and burned to ashes; then rake the ground over and sow the seed, which will not be attacked by insects while the effects of the fire remain. In the event of extremely dry weather, water the beds every evening until the plants are in full leaf. This is an infallible remedy.

Fish oil is known to be destructive to ants and various other small insects, but it is difficult to apply to plants.

In the summer season, Broccoli, Cabbage, Cauliflower, etc., are particularly subject to the ravages of grubs and caterpillars. To prevent this wholly, is perhaps impossible; still it is not difficult to check these troublesome visitors. It may be done by searching for them on their first appearance, and destroying them. Early in the morning, grubs may be collected from the earth, within two or three inches of such plants as they may have attacked the night previous.

The approach of caterpillars is discoverable on the leaves of Cabbages, many of which are reduced to a thin white skin by the minute insects which emerge from the eggs placed on them. These leaves being gathered and thrown into the fire, a whole host of enemies may be destroyed at once; whereas, if they are suffered to remain, they will increase so rapidly, that in a few days the plantation, however extensive, may become infested; and, when once these arrive at the butterfly, or moth stage of existence, they become capable of perpetuating their destructive race to an almost unlimited extent.

The same remarks apply to all other insects in a torpid state.

Worms, maggots, snails, or slugs, may be driven away by sowing salt or lime in the spring, in the proportion of two to three bushels per acre, or by watering the soil occasionally with salt and water, using about two pounds of salt to four gallons of water; or the slug kind may be easily entrapped on small beds of plants, by strewing slices of turnip on them late in the evening, on which the slug or snail will readily crowd, and may be gathered up early in the morning (before sunrise) and destroyed.

Moles may be annoyed and driven away, by obstructing the passage in their burrows with sticks smeared with tar. First insert a clean stick from the surface through the burrows; then dip others in tar, and pass them through into the floor of the burrows, being careful not to rub off the tar in the operation. Tar is also an effectual remedy against smut in wheat. After being heated in a kettle until it becomes thin, it may be stirred in among the grain until it becomes saturated. The wheat should afterwards be mixed with a sufficient quantity of wood ashes to dry and render it fit for sowing. Before using tar, however, the seed should be steeped in warm water until the germ is about to appear. Otherwise, tar will exclude the necessary moisture to insure germination; and a long time will elapse before the plants come up. And if too much tar be employed, they will *never* come up. A very thin coating of tar is sufficient. Coal-tar is better than pine tar.

To prevent depredations from crows, steep corn in strong saltpetre brine, sow it over the land, or steep your seed-corn; and if the crows once get a taste, they will forsake the field.

CHAPTER II.

ARTICHOKE.

ARTICHAUT. *Cynara*.

- VARIETIES.

Cynara Scolymus, or French. | *Cynara Hortensis*, or Globe.

THE garden Artichoke is a native of the South of Europe, and much cultivated for the London and Paris markets. It is a perennial plant, producing from the root annually its large, squamose heads, in full growth, from June or July, until October or November. The Globe Artichoke, which produces large globular heads, is best for general culture, the heads being considerably larger, and the eatable parts more thick and plump.

Both sorts may be raised from seed, or young suckers taken from old plants in the spring. A plantation of Artichokes will produce good heads six or seven years, and sometimes longer; but if a supply of this delicious vegetable be required throughout the season, a small plantation should be made from suckers every spring, for a successive crop, as the young plants will continue to produce their heads in perfection after the crops of the old standing ones are over.

The best way to obtain a supply of Artichokes from seed is to sow it in the latter part of March, or at any time in April, in a bed of good, rich earth; or it may be planted in drills one inch deep and about twelve inches apart. The ground should be light and moist, not such as is apt to become bound up by heat, or that, in consequence of containing too large a proportion of sand, is liable to become extremely hot in summer, for this is injurious to these plants. After the plants are up, they

should be kept free from weeds, and the earth often loosened around them.

The business of transplanting may be done in cloudy or wet weather, at any time after the plants are from nine to twelve inches high. Having fixed upon a proper soil and situation, lay on it a good quantity of rotten dung, and trench the ground one good spade or eighteen inches deep, incorporating the manure therewith. When this is done, take up the plants; and after shortening their tap-roots a little, and dressing their leaves, plant them with a dibble, in rows five feet asunder, and two feet from plant to plant, leaving part of their green tops above ground, and the hearts of the plants free from any earth over them, and give each plant a little water to settle the roots.

WINTER MANAGEMENT.

The winter dressing of Artichokes is an important operation; on it depends much of their future success. This should not be given them as long as the season continues mild, that they may have all possible advantage of growth, and be gradually inured to the increasing cold weather; but it should not be deferred too late, lest by the sudden setting in of hard frost, to which we are subject in the Northern States, the work be neglected, and the plants consequently exposed to devastation and loss.

In the first place, cut all the large leaves close to the ground, leaving the small ones which rise from the hearts of the plants. After this, line and mark out a trench in the middle, between each row, from fourteen to sixteen inches wide, presuming that the rows are five feet apart, as directed. Then dig the surface of the beds lightly from trench to trench, burying the weeds; and as you proceed, gather the earth around the crowns of the plants to the height of about six inches, placing it gently between the young rising leaves, without burying them entirely under it. This done, dig the trenches one spade deep, and distribute the earth equally between and on each side of

the plants, so as to level the ridges, giving them at the same time a neat, rounding form.

The beds may remain in this condition until there is an appearance of hard frost, when they should be covered with light dung, litter, or leaves of trees, to preserve the crowns and roots from intense cold. In this manner the roots will remain in perfect safety all the winter. As soon as the severe frosts are over, the beds must be uncovered, and when the young shoots begin to appear above ground, then, and not till then, level down the beds, throwing the earth into the alleys or trenches, and round them in a neat manner. Then dig in the short manure, and loosen all the earth around the plants. At the same time, examine the number of shoots arising on each stool, and select three of the strongest and *healthiest* on every stool, which are to remain; all above that number are to be broken off close to the roots with the hand, unless you want some for making new plantations, in which case an extra number for that purpose is to remain on the parent plants, until they are about eight or ten inches high, when they are to be slipped off, and planted in a bed prepared in the same manner as directed for the young plants, taking care at the same time to close the earth about the crowns of the roots, and draw it up a little to the remaining suckers.

The spring dressing should be given when the plants are in the above-described state, whether that occurs in February, March, or April, occasioned by the difference of climate in the respective States, or by the earliness or lateness of the spring.

The gardeners near London generally take off the side suckers, or small Artichokes, when they are about the size of a hen's egg. These meet with a ready sale in the markets, and the principal heads that are left are always larger and more handsome. The maturity of a full-grown Artichoke is apparent by the opening of the scales; and it should always be cut off before the flower appears in the centre; the stem should be cut close to the ground at the same time.

Artichokes are esteemed a luxury by epicures. To have them in perfection, they should be thrown into cold water as soon as gathered, and after having been soaked and well washed, put into the boiler, when the water is hot, with a little salt, and kept boiling until tender, which generally requires, for full-grown Artichokes, from an hour and a half to two hours. When taken up drain and trim them; then serve them up with melted butter, pepper, salt, and such other condiment as may best suit the palate.

ASPARAGUS.

ASPERGE. *Asparagus officinalis.*

VARIETIES.

Gravesend.
Large White Reading.

Large Battersea.
Large Green, or Giant.

This plant is a native of cold climates, and is found growing wild in Russia and Poland, where it is eaten by the cattle the same as grass. It will endure the severity of our winters, and produce buds when the weather becomes mild; but as garden products are generally scarce after a hard winter, the gardener who studies his interest will make the most of the spring season, and raise all he can before the market becomes glutted. To this end he is recommended to prepare for forcing this vegetable as soon as the coldest of the winter is past. (*See article on Forcing Vegetables.*)

Asparagus may be raised by sowing the seed in the fall as soon as ripe, or in March and the early part of April. One ounce of seed will produce about a thousand plants. It requires some of the best ground in the garden. The seed may be sown in drills, ten or twelve inches asunder, and covered about an inch with light earth. When the plants are up they will need a careful hoeing, and if well cultivated and kept free

from weeds, they will be large enough to transplant when a year old. Some keep them in the nursery-bed until they are two years old.

If the beds are properly dressed every year, they will produce well for twenty years or more. New beds may be made in autumn, or before the buds get far advanced in spring—say in February, March, or April, according to situation and circumstances. The ground for the bed must not be wet, nor too strong or stubborn, but such as is moderately light and pliable, so that it will readily fall to pieces in digging or raking, and in a situation that enjoys the full rays of the sun. It should have a large supply of well-rotted dung, three or four inches thick, and then be regularly trenched two spades deep, and the dung buried equally in each trench twelve or fifteen inches below the surface. When this trenching is done, lay two or three inches of thoroughly-rotted manure over the whole surface, and dig the ground over again, eight or ten inches deep, mixing this top dressing, and incorporating it well with the earth.

ARRANGING THE YOUNG PLANTS.

In family gardens, it is customary to divide the ground thus prepared into beds, allowing four feet for every four rows of plants, with alleys two feet and a half wide between each bed. Strain your line along the bed six inches from the edge; then with a spade cut out a small trench or drill close to the line, about six inches deep, making that side next the line nearly upright; when one trench is opened, plant that before you open another, placing the plants upright ten or twelve inches distant in the row, and let every row be twelve inches apart.

The plants must not be placed flat in the bottom of the trench, but nearly upright against the back of it, and so that the crown of the plants may also stand upright, and two or three inches below the surface of the ground, spreading their roots somewhat regularly against the back of the trench, and at the same time drawing a little earth up against them with

the hand as you place them, just to fix the plants in their due position until the row is planted. When one row is thus placed, draw the earth into the trench over the plants with a rake or hoe, and then proceed to open another drill or trench, as before directed; and fill and cover it in the same manner, and so on till the whole is planted. Then let the surface of the beds be raked smooth, and the stones removed.

Some gardeners, with a view to have extra large heads, place their plants sixteen inches apart in the rows, instead of twelve; and by planting them in the *quincunx* manner—that is, by commencing the second row eight inches from the end of the first, and the fourth even with the second—the plants will form *rhomboidal* squares, instead of *rectangular* ones, and every plant will thus have room to expand its roots and leaves, growing very luxuriantly.

The above directions are intended for family gardens. Those who may wish to raise *Asparagus* in large quantities for market, should prepare the ground with a plough, and plant two rows in each bed, which may be carried to any length required. If several beds are wanted, they may be planted in single rows, four or five feet apart, in order that the plough may be worked freely between them. Frequent ploughing will cause the roots to spread, so as to widen the beds; and the winter dressing may be performed in a great measure with the plough. After the *Asparagus* is cut, the ground between the beds may be ploughed, and planted with Cabbage, Potatoes, or any other vegetable usually cultivated in rows.

WINTER DRESSING OF ASPARAGUS-BEDS.

About the beginning of November, if the stalks of *Asparagus* turn yellow, which is a sign of their having finished their growth for the season, cut them down close to the earth, carry them off the ground, and clear the beds carefully from weeds.

Asparagus-beds must have an annual dressing of good manure; let it be laid equally over the beds, two or three

inches thick, after which, with a fork made for the purpose (which should have three flat tines), dig in the dung quite down to the crowns of the plants, by which means the roots will be greatly benefited; as the winter rains will wash the manure down among them. It is the practice with some gardeners to dig the alleys at every autumn dressing, and cover the beds with the soil taken out; this may be done for the first two years after the beds are made, but not afterwards. When the plants are in full growth, their roots and crowns extend into the alleys, and digging them up frequently will destroy plants, or render them too weak to produce buds in perfection. The beds will be greatly benefited if covered to the depth of several inches with leaves, sea-weed, or long litter from the livery-stables.

The seedling *Asparagus* should also have a slight dressing. Remove the weeds, and then spread light dung over it, to the depth of one or two inches, to defend the crown of the plants from intense cold.

SPRING DRESSING OF THE BEDS.

This work should be done from about the latter end of March to the middle of April, or just before the buds begin to rise. After clearing away all long litter, spread the short dung over the whole surface, and dig it in. If the alleys be dug at the same time, it will be beneficial to the plants. Care must be taken at this season not to wound the crowns with the tines of the fork; but forking the beds should not be neglected, as admitting the sun and rain into the ground induces the plants to throw up buds of superior size. To promote such a desirable object, the ground should be kept clear of weeds at all seasons, as these greatly impoverish the soil, and frequently smother the plants.

Every bed of *Asparagus* should be allowed to grow undisturbed, after the buds or stalks have been removed for a few weeks; otherwise the beds will not produce abundantly next season. There is great danger of injuring the productiveness

of Asparagus by cutting off every shoot as soon as it is a few inches high. One stalk at least should be allowed to grow unmolested in every crown after the third or fourth cutting. If the young shoots be cut off for several successive weeks, the top formed in the latter part of the season will be small and the growth feeble.

No fertilizing material should be applied to Asparagus in the spring but lime or salt. During the winter it is an excellent practice to throw all the soapsuds from the kitchen on the asparagus-beds; but as soon as the growing season commences, let salt be spread over the entire surface, until the ground appears as if covered with snow. Such a liberal dressing of salt will destroy all weeds and grass, and promote the growth of Asparagus.

Asparagus-plants will not produce buds large enough to cut for general use in less than three years from the time of planting; but in the fourth year, when the shoots are three or four inches high, they will bear extensive cutting, which should, however, be discontinued when no large buds are thrown up. The best way of cutting is to slip the knife down perpendicularly close to each shoot, and cut it off slantingly about three or four inches beneath the ground, taking care not to wound any young buds proceeding from the same root, for there are always several shoots advancing in different stages of growth.

Asparagus is considered a wholesome vegetable, and should not be kept long after it is gathered. After being well washed, it may be tied in bundles of about a dozen buds each, and boiled in water, slightly seasoned with salt, until tender, which will be in about twenty minutes. Take it up before it loses its true color and flavor, and serve it up on toasted bread with melted butter. Asparagus will never grow luxuriantly when there is an excess of moisture in the soil. Bone-dust is excellent as a dressing for asparagus-beds, if applied in late autumn. Guano and hen manure are also the best kinds of manure for asparagus. If the soil is heavy, apply a thin dressing of sand every season with the manure.

BEANS. (English Dwarfs.)

FEVE DE MARAIS. *Vicia faba.*

The principal cause of these garden Beans not succeeding well in this country, is the summer heat overtaking them before they are podded, which causes the blossom to drop off prematurely. To obviate this difficulty, they should be planted as early in the spring as possible. They are generally planted in England from October to April, for early crops, and from that time to July, for late crops. It sometimes happens that autumn plantings are injured by the coldness of their winters; but an average crop is generally obtained.

In the Eastern, Western, and Middle States, if a few of the best varieties of these Beans be planted in the open ground, as soon in the season as it can be brought into good condition, they will come into bearing in regular succession, according to their different degrees of earliness; and plantings may be repeated every ten days of the first spring month; but it is only from those which are planted early that any tolerable produce can be expected, as they become deficient in quality as well as in quantity on the approach of extreme warm weather. In the Southern States they may be replanted in succession throughout the autumn and winter months, which will cause them to bear early in the ensuing season.

The best mode of planting is in drills, drawn two inches deep, in which the seed Beans may be dropped two or three inches apart, according to their size, and the drills may be from two to three feet asunder. A strong clayey soil, if well drained, is the most suitable; but they often do well in moderately light ground, provided it be well trodden, or rolled, after the Beans are planted.

As soon as the Beans are three or four inches high, they will need a careful hoeing; and if some earth be drawn up to their stems three or four times in the course of their growth, it will greatly refresh and strengthen them. When they arrive

at full bloom, and the lower pods begin to set, the tops may be broken off. If this be done at the proper time, it will promote the swelling of the pods, as well as their early maturity; for having no advancing tops to nourish, the whole effort of the root will go to the support of the fruit.

DESTROYING GREEN BUGS.

Broad Beans are particularly subject to green bugs. Tobacco-water, or salt-water, will sometimes destroy them, but the most certain way is to watch their first appearance, and pick off that part on which they first settle, and burn it; or if such plants be cut down close to the ground, they will produce fresh shoots, which may bear a good crop. One quart of seed Beans will be required for every sixty feet of row, allowing the smallest sorts to be planted about two inches apart, and the largest four inches. The beans should be gathered young, and shelled while fresh. After having been washed, let them be boiled in plenty of water with a little salt and a bunch of green parsley. They take from thirty to forty minutes to boil, according to age, and may be served up with melted butter gravy. But they are very good when cooked and eaten with fat pork, or good old-fashioned Hampshire bacon.

BEANS. (Kidney Dwarfs.)

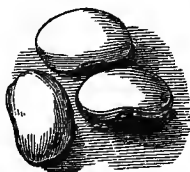
HARICOT. *Phaseolus vulgaris*, etc.

These varieties of Beans, being natives of India, South America, and other warm climates, will not endure the least cold, and it is therefore always hazardous to plant them in the open ground until settled warm weather. The earliest varieties, if planted towards the end of April or the first week in May, will come to perfection in from six to eight weeks after planting. Some of the later varieties will keep longer in bearing, and are esteemed by some on that account. These, with

some of the early varieties, may be planted in the months of May and June; and if a regular succession of young beans be



Kidney Beans.



Dumpling Beans.

required throughout the summer, some of the varieties should be planted every two weeks, from the last week in April until the beginning of August.

These Beans require a light, rich soil, in which they should be planted in hills, three or four in a hill, or drills about two inches deep, and the Beans two or three inches from each other; the drills may be from two to three feet apart. The Refugees do best when planted in hills.

Some gardeners, anxious to have Beans early, are apt to begin planting too soon in the season, and very frequently lose their first crops. It should be recollected that these Beans are next to Cucumbers and Melons as regards tenderness, and will always grow quicker and yield better, if the planting be delayed until settled warm weather. The early Mohawk is the hardest, and may sometimes succeed well if planted about the middle of April; but it is much safer to delay the planting of any quantity until towards the end of the month.

One quart of Kidney Beans will plant from three hundred and fifty to four hundred hills, according to the size of the Beans, allowing four Beans to each hill, or from two hundred and thirty to two hundred and sixty feet of row, allowing six Beans to every foot.

These Beans should not be suffered to get old and tough before they are gathered. Be careful, in trimming them, to strip off the strings. To effect this desirable object, break them across; and in order to preserve their greenness, soak

them in salted water for a short time, then put them into the water while boiling, which should be previously seasoned with salt. When they are tender, which will be in from fifteen to twenty minutes, take them up and drain them through a colander, in order to render them capable of absorbing a due share of gravy, melted butter, etc.

BEANS. (Pole or Running.)

HARICOTS A RAMES.

These species and varieties of Beans may be planted early in the month of May and in June, either in hills three feet apart or in drills about two inches deep, and the Beans two or three inches apart in the drills. The poles should be eight or ten feet long, and should be fixed in the ground before the Beans are planted, so as not to injure the roots in making the holes.

The varieties of Lima Beans should not be planted in the open ground until the second week in May, unless the season be very favorable and the ground warm. As these Beans are apt to get rotten by cold and damp weather, let six or eight be planted half an inch deep round each pole, and afterward thinned, leaving three or four good plants in a hill, which should be full four feet distant from each other every way.

Lima Beans require richer ground than any of the other sorts. A shovelful of rich, light compost, mixed with the earth in each hill, would be beneficial. If any varieties are wanted before the ordinary seasons, they may be planted in flower-pots in April, and placed in a greenhouse or garden-frame; and being transplanted with the balls of earth entire, will come into bearing ten or fourteen days earlier than those planted in the open ground. It will require about a quart of Lima Beans to plant one hundred hills. A quart of the smallest-sized Pole Beans will plant three hundred hills and

upwards, or about two hundred and fifty feet of row. Lima Beans should be shelled while fresh, and boiled in plenty of water until tender, which generally takes from fifteen to twenty minutes. The mode of cooking and preparing the other sorts is the same as for Kidney Dwarfs.

BEEET.

BETTERAVE. *Beta vulgaris.*

Beets, in their several varieties, are biennial; and the best blood-colored are much cultivated for the sake of their roots, which are excellent when cooked, and very suitable for pickling after being boiled tender. When sliced, they make an beautiful garnish for the dish, and the young plants are an excellent substitute for Spinach.

The Mangel-Wurzel and Sugar Beets are cultivated for cattle. Domestic animals eat the leaves and roots with great avidity. They are excellent food for swine and milch cows, and possess the quality of making them give a large quantity of the best-flavored milk. The roots are equally fit for oxen and horses, after being cut up into small pieces and mixed with cut straw, hay, or other dry feed. A small bed of the earliest Turnip-rooted and other esteemed kinds of Beets may be planted in rich, early ground the first week in April, which, being well attended to, will produce good roots in June.

Make drills a foot apart and from one to two inches deep; drop the seed in the drills one or two inches from each other, and cover them with mellow earth. When the plants are up strong, thin them to the distance of six or eight inches from each other in the rows. The ground should be afterwards hoed deep around the plants, and kept free from weeds.

If the planting of Beet-seed for general crops be delayed until May or June, the roots will be much larger and better than those from earlier planting, which, from being frequently stunted in growth by the various changes of weather, become

tough, stringy, and of unhandsome shape. In case of the failure of crops, or of unfavorable weather in June, Beet-seed planted the first week in July will sometimes produce large, handsome roots, which may be preserved for winter use.

The most suitable ground for Beets is that which has been well manured for previous crops, and requires no fresh manure provided it be well pulverized. It is always best to thin Beets while young. If the tops are used as a vegetable, they should not be left too long for this purpose, or they will greatly injure the roots of those that are to stand. Beds that are to stand through the summer, should be kept clean by repeated hoeings; and the roots intended for winter use should be taken up in October, or early in November. Allowing Beet-seed to be planted on the gardening plan, it will require at the rate of ten pounds for an acre of land. If cultivated on the field system—that is, by planting them a sufficient distance apart to admit of ploughing between each row—one half the quantity of seed will be sufficient. Thinning out the surplus plants is indispensable to the production of good roots.

An acre of rich, loamy soil has been known to yield two thousand bushels of roots, some of which weighed from fifteen to twenty pounds each. To produce such large roots, they should be cultivated in drills from two to three feet apart, and the plants thinned to ten or twelve inches in the rows. It is generally conceded, however, that moderate-sized roots contain more saccharine matter, in proportion to their bulk, than extra large roots; and that twenty tons, or about seven hundred bushels, are a very profitable crop for an acre of land, and would be amply sufficient to feed ten cows for three or four months of the year. A gentleman in Connecticut computes the products of one-fourth of an acre of good land at eight tons, which, he says, will support a cow the whole year.

Beets will usually produce more milk than turnips; and milk-dealers will always pay more for a bushel of good beets than for an equal quantity of turnips.

BORECOLE, OR KALE.

CHOU FRISE VERT. *Brassica oleracea, etc.*

There are several sub-varieties of this genus of plants besides those above specified, most of which have large open heads, with curled wrinkled leaves. The Dwarf Curled, or Finely Fringed sorts, are much cultivated in Europe for the table; and the coarse and tall-growing are considered profitable for cattle. The Thousand-headed Cabbage, and Cesarean Kale, grow from three to five feet high, and branch out from the stem, yielding an abundant supply of leaves and sprouts in winter and spring.

For the garden, these several varieties may be treated in every respect as Winter Cabbage. The seed may be sown from about the middle of May to the first week in June, and the plants set out in the month of July, in rich ground. They are never so delicious as when rendered tender by smart frosts. They are valuable plants to cultivate, particularly in more Southern States, as they will be there in the greatest perfection during the winter months. If planted in a gravelly soil, and in a sheltered warm situation, they will bear the winter of the Western States; and may be kept in great perfection in the Eastern States, if taken up before the frost sets in with much severity, and placed in trenches, up to their lower leaves, and then covered with straw or other light covering. The heads may be cut off as they are required for use; and in the spring, the stems being raised up, will produce an abundance of delicious greens.

One ounce of good Borecole seed will produce about four thousand plants, and may be sown in a border four feet by ten.

BRUSSELS SPROUTS.

CHOU DE BRUXELLES AGETS. *Brassica oleracea.*

This plant frequently grows from three to five feet high, and

produces from the stem small heads resembling cabbages in miniature, each being from one to two inches in diameter. The top of the plant resembles the Savoy, when planted late. The sprouts are used as winter greens, becoming very tender when touched by the frost. The seed may be sown about the middle of May, in the same manner as Borecole, and the plants set out with a dibble early in July. The subsequent treatment must be in every respect as for Borecole.

Some gardeners, with a view to furnish the New York markets with greens early in the spring season, when vegetables in general are scarce, cultivate the common Rape (*Brassica Rapa*), it being a good substitute for Brussels Sprouts, which are not always attainable after a hard winter. If Rape-seed be sown early in September, the plants will survive an ordinary winter, and produce top-shoots or sprouts early; but it is best sown as soon as the ground is susceptible of cultivation in the spring. The sprouts should be cut while young, as such greens command the best prices, and are more palatable than when far advanced in growth.

In cooking these sprouts and Kale, Colewort, and greens in general, they should be put into hot water, seasoned with salt, and kept boiling briskly until tender. If it be an object to preserve their natural color, put a small lump of pearlash into the water.

BROCCOLI.

CHOU BROCCOLI. *Brassica oleracea Italiana.*

The several varieties of Broccoli and Cauliflower may be justly ranked among the greatest luxuries of the garden. They need only be known in order to be esteemed. The Broccoli produces heads, consisting of a lump of rich seedy pulp like the Cauliflower, only that some are of a green color, others purple, some brown, and the white kinds so exactly resemble

the true Cauliflower, as to be scarcely distinguishable, either in color or taste.

Broccoli is abundant throughout England the greater part of the year; and is raised with as little trouble as Cabbages are here. The mode of raising the purple Cape Broccoli is now generally understood in this part of America; but the cultivation of the other kinds has been nearly abandoned, on account of the ill-success attending former attempts to bring them to perfection.

In some of the Southern States, where the winters are not more severe than in England, they will stand in the open ground, and continue to produce their fine heads from November to April. In the Eastern, Western, and Middle States, if the seed of the late kinds be sown in April, and the earlier kinds in May, in open ground, and treated in the same manner as Cauliflower, it would be the most certain method of obtaining large and early flowers; but as only a part of these crops can be expected to come to perfection before the approach of winter, the remainder will have to be taken up, laid in by the roots, and covered up with earth to the lower leaves in some sheltered situation, where they will come to more perfect maturity.

Those who are desirous of obtaining Broccoli and Cauliflower in a large quantity, so as to have all the different varieties in succession throughout the winter months, should have places erected similar to some of our greenhouses. The back and roof of such a house may be made of refuse lumber, which being afterwards covered with fresh stable-dung, will keep out the frost. The place allotted for Cape Broccoli and Cauliflower should have a glazed roof to face the south; the sashes must be made to take off in mild weather, but they should be always kept shut in cold weather, covered with mats, boards, or litter, to keep out the frost.

The hardy kinds of Broccoli may be preserved without glass, by having shutters provided to slide over the front in extremely cold weather, which may be covered over with fresh

stable-dung or other litter. If these plants get frozen, it will be necessary to shade them from the full rays of the sun until they are thawed, which may be done by spreading straw over them while they are in the bed. The sudden transition from cold to heat is more destructive to vegetables than the cold itself.

The proper time for sowing the seed of Purple Cape Broccoli is from the tenth to the twenty-fourth of May. Those who intend to provide a place for the winter-keeping of the other kinds, may sow seed of the most esteemed varieties at the same time, or in two or three separate sowings, a week apart.

In order to insure plants of a luxuriant growth, let the seed be sown in a moderately shaded border. It is best to sow it in shallow drills, drawn three or four inches apart, in which case, one ounce of seed will occupy a border of about four feet in width by twelve in length, and produce about four thousand strong plants. (*See article Cabbage, page 53.*)

When the plants are of sufficient size they should be transplanted into rich ground, which should be previously brought into good condition. This being done, plant them in rows two feet and a half apart, and two feet distant in the rows. As soon as they have taken root give the ground a deep hoeing, and repeat this two or three times in the course of their growth, drawing some earth around the stems.

Some of the Cape Broccoli, if attended to as directed, will come to perfection early in September and in October. The other kinds will produce heads in regular succession throughout the winter and spring months, according to their different degrees of earliness, if an artificial climate be provided for them. These, of course, with whatever may remain of the Cape Broccoli, will have to be taken up early in October, and laid in carefully, with the roots and stems covered with earth as far as their lower leaves. Those who have not a place provided may keep a few in frames, or in a light cellar; but every gardener and country gentleman should have suitable

places erected for a vegetable that yields such a delicious repast, at a time when other luxuries of the garden cannot be obtained.

It has been proved by repeated experiments, that the Purple Cape Broccoli succeeds better in our climate than any other variety; and also, that if Broccoli or Cauliflower plants be retarded in growth by extreme heat, they seldom arrive at full perfection. It is therefore important that the time of sowing the seed of Cape Broccoli be so regulated as to allow six weeks of the summer for the plants to grow in, previous to their being transplanted, and about seven or eight weeks between that and the commencement of cool autumn weather, which is essential to mature them.

If seed be sown much before the middle of May, or so early that the plants arrive at full growth in the heat of summer, and thereby become stunted, they generally button, instead of forming perfect heads of flowers, and are consequently of no use but for cattle.

In some of the Southern States late planting of Broccoli and Cauliflower succeeds better than early, because the winters are calculated to mature these vegetables, from their not being subject to injury from *slight* frost in a late stage of their growth.

CAULIFLOWER.

CHOUFLEUR. *Brassica oleracea botrytis.*

This is an excellent vegetable, and great pains must be taken in every stage of its growth to avoid the extremes of heat and cold, which accounts for good Cauliflowers being scarcely attainable in unpropitious seasons, and which the novice falsely attributes to defectiveness of the seed.

To produce early Cauliflower, the seed should be sown between the sixteenth and twenty-fourth of September, in a bed of clean, rich earth. In about four or five weeks after-

wards, the plants should be pricked out into another bed, at the distance of four inches from each other every way; and this bed should be encompassed with garden frames, covered with glazed sashes, and boards or shutters. The plants should be watered and shaded a few days till they have taken root; and afterwards they will require light and air every mild day throughout the winter. But the outsides of the frames must be so lined and secured, and the tops of the beds so covered, as to keep out all frost.

The plants should be well attended to until the time of transplanting in the spring; and those who have not hand or bell glasses, so as to enable them to set some out by the latter end of March, should have a frame ready about the last week in February, in order that they may be transplanted to the distance of eight or nine inches apart. This would prevent them from buttoning. If this be not done, some of the strongest plants should be taken out of the beds and planted in flower-pots, which may afterwards be placed in a frame or greenhouse, until the weather be warm and settled, which may be expected soon after the middle of April. They should then be turned out with the balls of earth entire, and transplanted into a bed of the richest earth in the garden, at the distance of two feet and a half from each other every way; the residue may be taken up from the frame the last week in April, or earlier, if the season proves mild, by means of a garden trowel, and transplanted as above.

The plants should afterwards be well cultivated, by hoeing the ground deep around them, and bringing some earth gradually up to the stems, so as to push them forward before the approach of warm weather. When the soil has been drawn up to the plants some little time, fork the ground between the rows lightly over, which will promote their growth. Those out of flower should be liberally supplied with water in dry weather, twice a week, and those in, every other day, which will contribute to their producing very large heads. As the flower-heads appear, the larger leaves should be broken down

over them, to defend them from the sun and rain, in order that the heads or pulps may be close, and of their natural color.

Plants from the autumn sowing will generally succeed best; but good Cauliflowers are sometimes produced from seed sown in a hotbed towards the end of January, or early in February. Great pains must be taken to have the bed in good condition to receive the seed. When the plants are up, they must have air every mild day, and as they progress in growth, they should have as much air as possible, consistent with their preservation; but the beds must be kept covered up every night, as long as there is any danger of frost. When the plants are three or four inches high, they must be pricked out three or four inches apart into another bed; and by the latter end of April they may be transplanted into the ground, and treated in every respect the same as the other.

In the early part of May, Cauliflower-seed may be sown in the open border, in drills, as recommended for Broccoli. One ounce of seed will produce about four thousand plants. These plants should be pricked out in June, and transplanted into good ground early in July, to flower in autumn. Those that are not likely to flower by the last of October, should be taken up and provided for in the manner recommended for Broccoli.

Cauliflower as well as Broccoli, should be gathered while the pulp is close and perfect. After having trimmed off some of the outside leaves, let them be boiled in plenty of water seasoned with salt, taking care to skim it, and also to ease the cover of the pot, so as not to confine the steam. Take them up as soon as the fork will enter the stems easily, which will be in from ten to twenty minutes, according to their size and age. Drain them, so as to make them susceptible of absorbing a due proportion of gravy or melted butter. This renders them a palatable and dainty dish.

Many persons are apt to forget, that the successful cultivation of Cauliflower depends on the particular seasons in which the plants are raised and set out. Consequently, instead of

raising their own plants in the right seasons, apply for them at the seed-stores and gardens, in May and June. If early Cauliflower do not arrive at or near perfection, by the end of June, the plants get stunted by the heat, and seldom yield anything but leaves, unless the summer should prove mild, in which case some of the early plants may flower in autumn. But it is needless to risk the setting out of early Cauliflower plants later than April for the sake of such chance, because plants raised from seed sown about the middle of May, and transplanted in July, are by far the most likely to produce good fall Cauliflower.

CABBAGE.

CHOU. *Brassica oleracea.*

The early sorts of spring Cabbage may be raised in various ways. Some sow the seed between the tenth and twenty-fourth of September, pricked out and managed the same as Cauliflower plants, only that they are more hardy, and may sometimes be kept through the winter without sashes.

Some prefer sowing the seed in a cold-bed, covered by a garden-frame with sashes. If this frame be placed on a warm border, and kept free from frost, and the seed of the early kinds sown the latter end of January, or early in February, these plants will be better than those raised in the fall; as they will not be so liable to run to seed, will be more hardy, and as early as those raised in hotbeds in the spring.

Or, if a heap of fresh horse-manure be deposited on the ground intended for the raising of early plants before the frost sets in, the same may be removed some mild day in January or February, and temporary frames made by driving stakes in the ground, and nailing planks or slabs thereto. The ground being then dug, the seed sown, and covered up with sashes, plants will soon be produced in perfection. The frames should be

well protected, by placing the manure around them, and covering the tops with mats and boards, as directed for hotbeds in the Calendar for February and March.

It is customary with gardeners about New York to raise their plants in hotbeds. In order to do this, the beds should be prepared in time to receive the seed by the latter end of February, or early in March. Plants thus produced, as well as those raised as before directed, will be fit to transplant about the middle of April, and should be carefully planted, with a suitable dibble, in good ground, from sixteen inches to two feet apart, according to size and kind. By being hoed often, good Cabbages will be produced in our latitude in June. If seed of the large and early kinds be sown in a warm border early in April, they will produce plants fit to transplant in May, which will make good Cabbages for summer use.

The seed of Red Cabbage may be sown towards the last of April, or early in May; and that of Savoys and late Cabbage in general, may be sown at two or three different times, between the middle and the end of May, in fresh rich ground.

The most certain way of raising good strong plants in the summer season, is to sow the seed in a moderately shaded border, in shallow drills drawn three or four inches apart. One ounce of seed sown in this manner, will occupy a border of about four feet in width by twelve in length, and produce about four thousand strong plants; whereas, if seed be sown broadcast, as is the usual custom, two ounces of seed may not produce so many good plants as the one ounce on the plan recommended.

The Bergen, and other large kinds, should be transplanted the second and third week in July, in rows thirty inches asunder, and the plants about two feet apart in the rows. The Savoys and smaller sorts may be planted about the same time, but from four to six inches nearer every way. Cabbage succeeds best in a fresh, rich soil; and the ground should be deeply hoed or ploughed at least three times during their growth.

As I have been more familiar with the cultivation of vege-

tables than fruits, I would state further my views relative to the Cabbage tribe. On New York Island, in the vicinity of the city, it is customary with gardeners to cut their Cabbages gradually as they are required for market, and often to leave their roots standing. These by some are ploughed under, where they not only feed, but generate their peculiar species of insects. Some gardeners take their roots and leaves to the cattle yard or dung-heap, and return them back to the garden the ensuing season in the shape of manure. As a consequence of such practice, good Cabbages are very seldom obtained, even after a routine of other crops, for two or three years.

EVIL OF DEEP PLANTING.

With a view to illustrate the evil of deep planting, I would observe further, that when Cabbage plants are transplanted in proper season and on fresh soil, they generally prove uniformly good; whereas, if it should happen, as it sometimes does for want of suitable weather, that the plants cannot be transplanted until they get crooked and overgrown, so as to require deep planting to support them in the soil, such plants, like diseased Peach-trees, decay first in the bark, between earth and air, and then, from being deprived of a natural circulation of the vegetable juices, die and discharge their putrid matter in the earth, to the destruction of such other plants as may be inserted in their stead. I have frequently known a land of Cabbage plants filled up half-a-dozen times, and the crop at last scarcely worth gathering; whereas could the plants have been set out while dwarfish, and inserted their proper depth in the ground, the cultivator would have been rewarded a hundredfold.

The *Brassica Rapa*, or Turnip-Cabbage, produces its bulb or protuberance on the stems above ground, immediately under the leaves. It is eatable when young, or about the size of a garden Turnip. The seed may be sown in April or May, and the plants afterwards treated the same as Cabbage, only that in earthing up the plants you must be careful not to cover the

globular part. They are much more hardy than Turnips. In England the bulbs often grow to upwards of twenty inches in circumference, and weigh from ten to twelve pounds. They are cultivated for the feeding of cows and sheep, as well as for table use. In either case, they are treated like Cabbage, or sowed like Turnips, and afterwards thinned to proper distances.

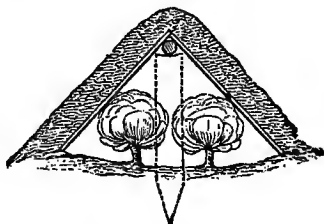
The *Brassica Napus*, or Turnip-rooted Cabbage, has an oblong thick root in the form of a winter Radish. It is extremely hardy, and will survive very hard frosts. The seed should be sown in rich ground, and treated in every respect as Turnips, observing to thin the plants with a hoe to the distance of sixteen inches apart. Their roots will be much larger and better when treated in this way than if transplanted.

The *Brassica Napus*, variety *esculenta*, is sometimes cultivated as a salad herb. It is held in great esteem by the French as a culinary vegetable, and is called the Navet, or French Turnip. In France, as well as in Germany, few great dinners are served up without it in some shape or other.

HOW TO KEEP CABBAGES.

As numerous species of insects attack plants of the *Brassica* or Cabbage tribe in every stage of their growth, great caution is necessary in their cultivation. For a prevention to the attacks of fleas or flies, see page 29 of the General Remarks. Perhaps the most effectual way of saving plants from grub-worms, is not to transplant any during the month of June. Seed-beds are very seldom attacked; but if they should be, they may be protected by digging trenches around them, and throwing in lime, salt, or ashes, sufficient to prevent the ingress of the worms. If seed of the various kinds be sown at the times recommended, the early varieties will be so far advanced in growth before the grub-worms prevail, as to be out of their reach; and by the time the late-sown plants are ready to transplant, the worms will be harmless, because they turn grey

towards the end of June, and by the middle of July, the time recommended for general transplanting, the danger from grub-worms is over.



Section of Cabbage Pit.

In the colder portions of the country, those cabbages that have not attained their full growth, if set in rich ground as they grew, in a pit, before cold weather commences, late in autumn, and covered with a roof of boards and earth, as shown by the illustration, will be nicely headed by the opening of spring. The engraving needs no explanation to enable any person to construct a cabbage-pit.

In some parts of New Jersey and Long Island, where we sometimes see forty or fifty acres of cabbage in one field, a deep furrow is ploughed, the heads are cut from the stumps and placed upside down, close together in the furrow, and two furrow-slices turned over the row of heads. The ridge is then smoothed off with a shovel. Some gardeners allow the stumps of the cabbages to extend above ground. But the better way is to remove the stumps.

COLEWORT, OR COLLARDS.

CHOU VERT. *Brassica oleracea*.

This is a species of Cabbage which is eaten when young; it so nearly resembles the early kinds of Cabbage, that it is seldom cultivated. The English frequently sow the seed of early-head-

ing kinds of Cabbage as a substitute, which being done at different seasons, enables them to procure a supply of fresh greens from their gardens every day in the year. This is not attainable here, on account of the extremes of heat and cold; but Collards would prove very valuable and acceptable in the event of an unfavorable season for fall cabbage.

If the seed of Early York, Early Dutch, or other early kinds of Cabbage be sown in June, July, and August, and transplanted, as they become fit, into good ground from fifteen to eighteen inches apart, the first planting would make good heads for fall use; and the plants of late sowings, if transplanted in September and October, in a warm border, would produce tender, sweet-eating greens for use in the early part of winter; the latter plantings may be placed ten or twelve inches from plant to plant. These could be easily sheltered on the approach of severe weather, without being taken up. The cultivation of Collards is well adapted to our Southern States, as there they need no protection in winter.

CARDOONS.

CARDON. *Cynara cardunculus*.

The Cardoon Artichoke, a native of Candia, is much cultivated in Europe for culinary purposes, such as for salads, soups, stews. The stems of the leaves being thick and crisp, are the eatable parts, after being blanched. They are in perfection in autumn and winter.

The seed may be sown in a bed of rich earth in the month of April; and one ounce will produce about six hundred plants. When the plants are up strong, they should be thinned so as to leave them four or five inches apart. They may be transplanted in June, at the distance of four feet from each other every way. Observe, before planting, to dress their tops and roots the same as Celery. As they advance in

growth, they are to be earthed up for blanching, keeping the leaves close together. This may be done with bass or matting, as practised with Endive. They are afterwards to be earthed up gradually from time to time, until whitened to a sufficient height. As winter approaches, Cardoons must be taken up and laid away like Celery, or they may be preserved with sand in a cellar.

CARROT.

CAROTTE. *Daucus carota.*

The Carrot is a native of Britain, and grows by the roadside in many parts. As a culinary vegetable, it is much used in soups and stews, and forms a dish with boiled beef, etc. The coarse sorts are cultivated as fodder for cows, sheep, oxen, and horses, and are considered profitable, as they frequently yield upwards of four hundred bushels to an acre, when cultivated on the field system.

For the garden, the Early Orange should be cultivated for spring and summer use; but the Long Orange is more suitable for main crops, on account of its bright orange color, as well as for its great size and length. Carrots grow to great perfection in a rich loamy soil; and may be raised in drills drawn about one inch deep, and twelve inches asunder. A small bed may be planted at the latter end of March for an early crop, and from that time to the end of May for successive crops; but the principal crop should not be sown too soon, as the early plantings are apt to produce seed-stalks, and, consequently, stringy and useless roots.

The most suitable ground for late Carrots is that which has been well manured for previous crops, and requires no fresh manure. If the seed be sown in June, and the plants thinned out to the distance of five or six inches from each other when young, and kept hoed, they will yield an abundance of fine

roots for winter and spring use, by being taken up in autumn, and preserved either in sand in a cellar, or covered up in pits in a garden, as directed for burying potatoes.

Although Carrot-seed is naturally small and light, it seldom fails to vegetate in favorable seasons. It, therefore, need not be sown too thick in ground not apt to produce weeds. If a root could be insured to grow unmolested in every instance where a seed may be deposited, two pounds would be more than sufficient for an acre of land. But gardeners generally use four or five pounds to the acre, in order that the rows may be more easily traced in the event of a luxuriant growth of weeds. To avoid risking an unequal crop in small gardens, half an ounce of seed should be allotted for every pole, perch, or rod, or twenty ounces for a rood of land. On light ground, the use of a roller would be beneficial in dry weather, excess of which is detrimental to the germination of Carrot, as well as of all other light seed.

We herewith give an illustration of a full-grown carrot, before the leaves are removed, for the purpose of stimulating those who have commenced raising a crop of this kind of roots, to persevere in the thorough cultivation of the young plants. Carrots require timely cultivation, while the plants are quite small, before their growth has been checked by weeds.

As soon as the rows can be discovered, if they are sufficiently far apart to admit a horse-hoe, let that implement be run between the rows as shallowly as practicable, to cut up the weeds. This should be done when the sun shines, in order to kill every weed that is disturbed. After cultivating with a horse-hoe, go over all the rows with a hand-hoe, drawing the hoe across the drills every eight inches, cutting up every green thing. After this operation is completed, there will be one or more carrots standing among every little cluster of weeds. Immediately after a good shower of rain, summon all hands, and finish weeding the young carrots, which are tender plants, and will not endure bruising like turnips. When the weeds are pulled up, knock off the earth and spread them carefully around the



An Orange Carrot.

young plants. Such weeds will soon decay, and promote the growth of carrots by operating as a mulch, as well as a fertilizer. If no horse-hoe is at hand, all the dressing may be done with a scuffle-hoe, which is far better than an ordinary hand-hoe. With a scuffle-hoe, the operator moves backwards, leaving all the weeds and grass lying up lightly; while, if the hoeing be performed with a hand-hoe, many of the weeds will be pressed by the feet into the mellow soil, where they take root and continue to grow about as well as if they had not been dug up.

The weeds growing in close proximity to carrots should be pulled up when the ground is wet, or at least very moist. For

when the sun pours down the scorching heat, a slight disturbance of the ground near the growing carrots will disturb the roots, and the burning sun will wilt them as soon as the weeds that have been pulled up.

CELERY.

CELERY. *Apium graveolens.*

This vegetable, so much esteemed as a salad, is known in its wild state by the name of Smallage; and is found in great abundance by the sides of ditches, and near the sea-coast of Britain. The effects of cultivation are here strikingly exhibited, in producing from a rank, coarse weed, the mild and sweet stalks of the Celery. This circumstance should stimulate the young gardener to aim at improvement in the cultivation of plants in general.

It is customary with some gardeners to raise their early plants in hotbeds; but as plants thus raised are apt to produce seed-stalks, it is much safer to cultivate them in cold beds, prepared as directed for the raising of early Cabbage-plants. The seed for a general crop may be sown the last week in March, or early in April, in rich, mellow ground, and in a situation where the plants can be protected from the parching heat of a summer sun (a border against a north aspect is the most suitable). Some sow the seed broadcast; but the plants will be much stronger if raised in drills. The drills may be half an inch deep, and six inches apart, so that a small hoe can be worked between the rows; and if properly attended to, every ounce of seed sown will produce ten thousand strong plants or more. The early sown plants should be pricked out in a nursery-bed of cool rich earth, as soon as they are two or three inches high, there to remain about a month after which they will be fit to transplant into the trenches.

Choose for this purpose a piece of rich ground, in an open exposure. Mark out the trenches by line, ten or twelve inches wide, and allow the space of three feet between them, which will be sufficient for the early plantations. Dig each trench a spade deep, laying the earth equally on each side between the trenches. Put three inches deep of rotten dung in the bottom of each trench, then pare the sides, and mingle the manure and parings with an inch or two of the loose mould at the bottom, incorporating all well together, and put in the plants.

Previous to planting, trim the plants, by cutting off the long straggling leaves, and also the ends of the roots. Let them be planted with a dibble, in single rows, along the middle of each trench, five or six inches between plant and plant. As soon as they are planted, give them a plentiful watering, and let them be shaded until they strike root and begin to grow. The main crops may be planted in the same way, but in trenches four feet distant from each other, and an inch or two further from plant to plant; or in beds made in the following manner, which, for the ease of preserving the plants in winter, will be found extremely convenient, besides a greater quantity can be raised on a given piece of ground:

Lay out the ground into beds four feet wide, with alleys between, three feet in width. Dig the beds a spade deep, throwing earth on the alleys. When done, lay four or five inches of well rotted dung over the bottom of the beds. Incorporate it with the loose soil, and cover the whole with an inch or two of earth from the alleys; plant four rows in each bed at equal distances, and from six to eight inches apart in the rows; after which, give them a plentiful watering, and shade them.

BLANCHING CELERY.

The earthing should never be done when the plants are wet, as this is apt to make the Celery rusty; but should be

performed gradually in fine weather as the plants progress in growth, repeating the earthing every two weeks; at which time, care should be taken to gather up all the leaves neatly, and not to bury the hearts of the plants. When they are grown two feet high, and well blanched, they are fit for the table.

As Celery will grow three or four feet high in one season, it will be necessary to delay the planting of that which is intended for winter use until the latter end of July; but the trenches should always be prepared in time, to avoid a serious drought, which often delays the planting till too late in the season. The blanching of Celery for winter use may be delayed until October.

When Celery is raised on a large scale, the trenches may be worked out with a plough, and finished with a spade or hoe. The ground may also be ploughed between the rows previous to earthing it up, which will save much labor.

The *Celeriac*, or Turnip-rooted, may be planted either on level ground or in shallow drills. The root of it swells like a Turnip, and may be preserved in sand through the winter. The French and Germans cut it in slices, and soak it a few hours in vinegar. By such simple preparation it becomes mellow as a pineapple, and affords a delicious and very nourishing repast.

Some gardeners are accustomed to cultivate Celery on the level ground. Others, after making their trenches in the usual way, go to the expense of carting peculiar soil from a distance, with which they replenish their trenches until nearly full. Those who have pursued the latter plan, say that they are rewarded for their trouble by gathering roots of superior size and quality. Those gardeners whose subsoil, or under stratum, is inferior, or ill-adapted for the growth of Celery, should cultivate it in shallow drills or furrows worked out with a plough, by which means they may secure good soil to plant in, and also to earth up with. In such cases the rows must be from four to five feet apart; and frequent ploughing between them would promote the growth of the plants.

Some gardeners prefer to raise celery on level ground, and continue to form a ridge, as the plants grow, by drawing clean earth up against the plants. Others set a four or five-inch drain tile over each plant; and as it grows, fine, rich, clean soil—mostly sand—is worked down in the tiles, keeping the plants in the middle of the orifice in the tile. Others set two planks on the edge, each side of the rows of celery, and fill up between the planks with a clean loamy soil.

THE BEST WAY OF STORING CELERY.

Many people complain of their Celery—one of the most difficult garden crops to raise in perfection—that it does not keep well through the winter; sometimes withers, but oftener rots. It is recommended by some that it should be preserved in the rows where it grows, and that removal more or less injures it. Where the plant is grown in a soil of a dry nature—and Celery never should be grown there—it may be well kept in the row; but we deny most emphatically that removal injures it in the slightest particular.

We pursue two modes, and find both to answer completely. The first is to remove the Celery to high and dry ground, dig a trench spade-deep, stand up a row of plants, then three inches of soil, then another row, and so on until about a half-dozen rows are finished, and then commence another bed, and so on. The soil should be packed firmly, and banked up so that the tops of the Celery are just covered; then spank off roof-fashion, to turn the rain. Over this two wide boards, nailed together, should be placed as a security against moisture. For remember it is water, not frost, as some say, that rots Celery. Frost adds to its tenderness.

Another plan is to sink barrels into the earth, so that the tops are two or three inches below the surface, stand them compactly full of Celery, put close or tight covers upon them, and then a couple of inches of soil. By this mode, somewhat more troublesome than the other, ours kept well for the last

two or three years until all was consumed, which was late in spring.

CORN SALAD, OR FETTICUS.

MACHE OU DOUCETTE. *Valeriana locusta.*

VARIETY.—*Olitoria.*

This plant grows spontaneously in the cornfields of England; hence it is called Corn Salad; and from its being sufficiently hardy to stand the winter, and affording an early pasturage, it has acquired the appellation of Lamb's Lettuce. It is cultivated as a salad for winter and early spring use. The seed may be sown in rich, clean ground the latter end of August or early in September.

Some gardeners sow the seed in beds four or five feet wide, with paths between each bed, just sufficient to admit of room for hand-weeding; but it will vegetate more freely if sown in drills half an inch deep, provided it be carefully covered. The drills may be about six inches apart, or just sufficient to admit a small hoe to work between the rows; for if the plants are not cleared of all weeds while young, they will be more plague than profit.

Fetticus must be covered up with straw at the approach of severe weather, to preserve it in good condition for use in the early part of the ensuing spring, as that is the season which most amply remunerates the cultivator. The seed of Fetticus is small and light; but it will admit of being sown thick, say at the rate of from four to six pounds to an acre of land.

CRESS.

CRESSON. *Lepidium sativum.*

Cress is a small salad-herb, and is generally used with Lettuce,

White Mustard, Rape, Chervil, etc. It may be sown very thick in little drills, like salad-seed, and cut before it comes into rough leaf. A small quantity in the salad season, which is spring and autumn, may be sown every week in rich ground, free from weeds.

CRESS (Water).

CRESSON DE FONTAINE. *Sisymbrium nasturtium*.

The Water-Cress is a creeping, amphibious perennial, and is grown very extensively for the London markets. Loudon says, in his Encyclopædia of Gardening, that "The most suitable description of water is a clear stream, not more than an inch and a half deep, running over sand or gravel; the least favorable, deep, still water, or a muddy bottom. It is highly advantageous to make the plantations in newly-risen spring-water, as the plants do not only thrive better in it, but, in consequence of its being rarely frozen, they generally continue in vegetation, and in a good state of gathering, through the whole winter season. The plants are disposed in rows parallel with the course of the stream, about eighteen inches apart. When these plants begin to grow in water one inch and a half deep, they soon check the current so as to raise the water to the height of three inches above the plants, which is considered the most favorable circumstance in which they can be placed. It is absolutely necessary to have a constant current; as where there is any obstruction to the stream, the plants cease to thrive. After they have been cut about three times they begin to stock; and then the oftener they are cut the better."

CUCUMBER.

CONCOMBRE. *Cucumis sativus*, etc.

The *Cucumis sativus*, or common Cucumber, is a native of

the East Indies, and of nearly as great antiquity as the vine. As Cucumbers are much used in New York, it should be an object with gardeners to have them in the market early; directions for raising them out of the ordinary season are therefore given in a future page, under the head Forcing Vegetables, to which the reader is referred. Cucumbers may be raised in the open ground by planting seed the first week of May, in hills four feet apart; or, if the ground be light, basins formed an inch below the level of the surface would be beneficial. Previous to planting, the ground should be prepared by incorporating a shovelful of rotten dung with the earth in each hill, after which four or five seeds may be planted half an inch deep. One ounce of good seed is sufficient for two hundred hills and upwards.

Cucumbers are liable to be attacked by a yellow fly, which sometimes devours young plants. These and other insects may be killed by sowing tobacco-dust, soot, or powdered charcoal round about the vines, when they first come up, or by applying the liquid recommended in page 29 of the General Remarks. After this is done, the plants may be thinned to two or three in a hill, and the ground carefully hoed, drawing a little earth round them at the same time. The vines should be kept free from weeds, and if the weather proves dry, a gentle watering now and then, given in the evening, will be of considerable service.

Picklers may be raised by planting the seed at any time in July. When the vines begin to bear, they should be looked over, and the fruit gathered as soon as it becomes fit, as the plant will cease to bear much if the fruit be permitted to get yellow.

RAISING IN HOTBEDS.

The seed is generally sown in pots or boxes of light, rich mould, and placed in a hotbed; and some sow the seed in the earth of a small bed prepared for the purpose. In either case,

as soon as the plants have fully expanded their two seed-leaves, they may be transplanted into pots, putting three plants in each pot; when this is done, apply water warmed to the temperature of the bed, and shut down the glasses, keeping them a little shaded by throwing a mat over the glass, till the plants have taken root. When they are about a month old, they will be fit to transplant into the fruiting-bed.

After the situation of the bed has been ascertained, the heat regulated, and the earth formed into hills, raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the temperature of the bed, and kept shaded until they have taken root.

The temperature should be kept up to 60°, and may rise to 80° without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well-prepared dung must be applied all round the frame. Begin by lining the back part first; cut away the old dung perpendicularly by the frame, and form a bank two feet broad, to the height of a foot, against the back of the frames; as it sinks, add more; renew the linings round the remainder of the bed as it becomes necessary, and be careful to let off the steam and give air to the plants at all opportunities.

Give young Cucumber plants necessary waterings, mostly in the evening, in early forcing; and in the afternoon, in the advanced season of hot, sunny weather. Some use water impregnated with sheep or pigeon-dung. As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, for which purpose a supply of good mould should be kept ready at hand, to be used as required.

When the plants have made one or two joints, stop them by pinching off the tops, after which they generally put forth

two shoots, each of which let run till they have made one or two clear joints, and then stop them also; and afterwards continue throughout the season to stop them at every joint; this will strengthen the plants, and promote their perfecting the fruit early.

The following artificial operation is recommended by Abercrombie, Phial, and other writers, as essential to the production of a full crop of Cucumbers under glass. In plants more freely exposed to the open air, the impregnation is effected by nature. Those which some call false blossoms are the male flowers, and are indispensable in this operation.

“The Cucumber,” Abercrombie observes, “bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males; but these are placed in the vicinity of the females, and are absolutely necessary, by the dispersion of their farina, to impregnate the female blossom, the fruit of which will not otherwise swell to its full size, and the seed will be abortive. The early plants under glass, not having the full current of natural air, nor the assistance of bees and other winged insects to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification watch the plants daily; and as soon as the female flowers and some male blossoms are fully expanded, proceed to set the fruit the same day, or next morning at furthest. Take off a male blossom, detaching it with part of the footstalk. Hold this between the finger and thumb; pull away the flower-leaves or petals close to the stamens or central part, which apply close to the pistil in the bosom of the female flower, twirling it a little about, to discharge thereon some particles of the fertilizing powder. Proceed thus to set every fruit, as the flowers of both sorts open, while of a lively, full expansion; and generally perform it in the early part of the day, using a fresh male, if possible, for every impregnation, as the males are usually more abundant than the female blos-

soms. By this management, the young fruit will soon be observed to swell freely."

Cucumbers attain the proper size for gathering in from fifteen to twenty days after the time of setting; and often in succession for two or three months or more, in the same beds, by good culture.

If it be desired to have Cucumbers in the open garden at an early season, the plants may be raised and planted in a warm border either in the earth or in hotbed ridges. A hand-glass should be provided for each hill, which must be kept close down every night and in cool days, taking care to admit air when practicable. The plants may be hardened by degrees, by taking off the glass in the heat of the day; and as the weather gets warm, they may be left to nature.

CHIVES, OR CIVES.

CIVETTE. *Allium schænoprasum.*

This is a small species of Onion, and grows in large turfs. It is propagated by offsets from the roots, and may be planted either in spring or autumn in rows ten or twelve inches apart, and the bulbs three or four inches apart in the rows. They will soon take root, and increase very fast, forming large bunches of bulbs. They make handsome edging for beds or borders.

EGG-PLANT.

MELONGENE AU AUBERGINE. *Solanum melongena.*

The seed of the Purple Egg-plant may be sown in a hot-bed about the first of March; and the sashes must be kept down close until the plants come up, after which a little air

may be given in the heat of the day. Towards the middle of May, if the weather be warm and settled, the plants should be set out from twenty-four to thirty inches apart, in a rich, warm piece of ground; and if kept clean, and a little earth be drawn up to their stems when about a foot high, they will produce plenty of fruit.

Plants of the white variety may be raised in the same manner and transplanted into pots in May; or if some of the seed be sown in a warm situation the first week in May, these may come to perfection in the course of the summer. This variety, though generally cultivated for ornament, is good when cooked.

As Egg-plants will not grow in the open ground until settled warm weather, and are apt to perish from being transplanted too early, the gardener should be provided with small pots, in order that the plants may be transplanted therein early in May, and placed in a frame, there to remain until the first week in June, at which time, if they are turned out and planted with the balls of earth entire, they will soon take root and grow freely.

MANNER OF COOKING.

Select the fruit when at maturity; cut it into slices, and parboil it in a stewpan; when softened drain off the water; it may then be fried in batter made with wheaten flour and an egg, or in fresh butter with bread grated fine and seasoned before it is put in the pan, with pepper, salt, thyme, and such other herbs as may best suit the palate. Some use Marjoram, Summer Savory, Parsley, Onions.

Egg-plant seed will not vegetate freely without substantial heat. If the plants get the least chilled in the earlier stage of growth, they seldom recover. It is therefore important that the frame allotted for them be placed over a well-regulated hot-bed, and partitioned off, so that the sash can be kept down over the plants in cool weather.

Some gardeners raise Egg-plants in the same frame with Cabbage, and such other half-hardy plants as require air every mild

day. By such management, one or the other must suffer for want of suitable aliment, *heat* being the principal food of tender plants, and *air* that of the more hardy species.

ENDIVE, OR SUCCORY.

CHICOREE DES JARDINS. *Cichorium endiva*, etc.

The *Cichorium endiva* is a native of China and Japan, and is much used in salads and stews, and as a garnish for the table. The proper kind of seed for early sowing is the Green Curled. A small quantity of this may be sown at different times in April and May, by those who would have it early. This plant is apt to run to seed. For this reason, it will be best to delay the sowing of seed for general crops until June or July. If a small quantity of each esteemed variety be sown two or three times in these months, they will produce a plentiful supply for use in autumn and the early part of winter. One ounce of good Endive-seed will produce about five thousand plants.

When the plants are three or four inches high, they should be transplanted into good ground, at the distance of a foot from each other, and immediately watered. If they are set out in cloudy or wet weather, it will save this trouble. The plants will require to be hoed and attended to in the same manner as lettuce, until grown to a moderate size, when they must be blanched. Select the large and full-hearted plants, and with bass or other strings tie them a little above the middle, not too tight, previously gathering up the leaves regularly in the hand. This must be done when the leaves are very dry, otherwise the plants will rot. *Cichorium intybus* grows spontaneously in many parts of Europe and America. In France it is much cultivated; the tops of the plants are considered profitable for cattle, and the roots are taken up in autumn and dried.

The aromatic and volatile qualities of coffee are, by the combination of this root, rendered more mellow and full upon the palate, and its fragrance greatly increased, producing an agreeable tonic and most exhilarating beverage.

Sow the seed in April in drills half an inch deep and about eighteen inches apart; thin out the plants to six or eight inches in the row. The plant produces beautiful blue flowers, and is worthy of a place in the flower-garden. The roots when dried, roasted as coffee, and ground, may be mixed in the proportion of two ounces of the powder to a pound of coffee.

HORSERADISH.

RAIFORT. *Cochearia armoracia.*

This plant is propagated by cuttings from the root, either cut from the top about two inches long, or by offsets, or otherwise useless parts, from the sides of the main root, retaining the crowns or top-shoots in as many parts as possible. These should be planted as early in the spring as practicable, in rows two feet apart and six or eight inches from each other in the rows.

Select for the bed a good depth of soil, and such as will retain moisture; manure it with well-rotted dung, plough or dig it deep, and the draw-drills a foot apart; then plant with a dibble, cuttings as above described, in every alternate drill, from two to three inches deep. The intermediate drills may be planted with Beet or Carrot-seed, or that of any other root; but Turnip-Beets are the most suitable to cultivate between the rows, as they will grow quick and can be pulled out without disturbing the Horseradish.

The beets must of course be thinned out while young, and kept cultivated by hoeing between the rows, which will also benefit the Horseradish. After the Beets are pulled, hoe the ground again, and keep it clear of weeds, by which method the

bed may be cleared every year. Some cultivate Horseradish in a permanent bed ; in which case, if, in taking up the roots, some offsets be left in the ground, they will produce a successive supply for future years.

JERUSALEM ARTICHOKE.

POMME DE TERRE. *Helianthis tuberosum.*

This plant is a native of America. The tubers of the root, which are generally abundant, were, before Potatoes became improved by cultivation, in great esteem, and are yet considered a fine-flavored and nutritious food, when boiled and mashed with butter. They may be easily propagated by cutting the roots into sets, with two eyes in each, and planting them in the same manner as Potatoes, in March and April. To have them in perfection, they should be hoed frequently, and the ground kept loose around them. In digging them for use, care should be taken to gather them out clean, as the least particle left will grow the year following, and encumber the ground, without producing a crop worth raising.

INDIAN CORN. MAIS. *Zea mayz.*

The different varieties of early Corn intended for boiling when young, or others as curiosities, may be planted in the garden the last week in April, or early in May, in hills four feet apart, or in drills. If some of each esteemed variety be planted in separate beds at the same time, they will come in for the table one after the other in regular succession. After this, if any particular variety be preferred, it may be planted at different times in the month of May and June. If the ground be poor, mix a shovelful of old manure with the earth in each hill before the kernels are planted, and after the plants are up strong, scatter a teacupful of wood-ashes around each

hill. This, with attentive hoeing, will cause it to produce ears early. Deep digging or ploughing between the hills is very beneficial when the corn is about eighteen inches high.

There is danger of planting Indian Corn too early, as the kernels will rot before they germinate, when the ground is wet and cold. Then, if the weather be so cold after the corn has come up, that it cannot grow, the young plants receive a stunt from which they never recover. The *locality* must always be the guide respecting the time to plant Indian Corn.

My advice has always been to young gardeners, not to plant Indian Corn too early. Wait till the soil is warm, and the growing season well advanced, before planting any kind of corn. Work at the ground where Indian Corn is to be planted; and get it in an excellent condition, thoroughly pulverized, drained, if necessary, and manured bountifully; then when all the trees are in full-leaf, and apple-trees begin to cast their blossoms, put in the seed, and the young corn will often appear in five days. I have known corn planted dry, in my own garden, to come up in four days, when the soil was warm; and I have often waited over two weeks for good seed to vegetate; and even after so long a time, the blades did not appear. Indian Corn must have dry and rich ground, and warm weather, or it will not produce large ears.

In order to have a succession of "roasting ears," or green corn, my practice is to prepare the ground for several rows, side by side. Then two weeks after the first row was planted, put in the seed for another row, and so to the middle of summer. In this way, one may have green corn for a long time.

Indian Corn will mix when different varieties are planted in such close proximity that the pollen from the tassels will be carried to the silken cords, one of which proceeds from the root of every kernel to the end of the growing ear. If varieties are permitted to mix, they soon lose their identity. The product *may* be quite as good, and perhaps better, than the variety planted; and it *may not* be so excellent.

To prevent any and all varieties from hybridizing, cut off

every tassel as soon as it appears. This will not injure the growing corn in the least; and it will always be found a complete security against mixing of the seed, even when varieties widely different are grown in rows side by side. But the tassels must be clipped off before they have pushed entirely out of the sheath, or a portion of the pollen may be blown to the ears, and thus impregnate the young grain. A piece of paper tied over each ear, will shield it from the pollen. I allude to this subject, as it is desirable to know how to keep a good variety pure for several years.

MAIZE FOR SOILING, OR FOR DRY FODDER.

One acre well prepared by thorough pulverization and manuring and seeded with maize, will almost always yield three times as much feed for soiling stock of any kind, as can be produced from any other kind of grain or grass. Growing Maize or Indian-corn feeds largely on coarse manure, which other plants do not appropriate to their growth and development. For this reason, the ground can be, and always should be, highly manured. If a farmer apprehends a scarcity of pasture, he should make preparations at once for putting in one or more acres, for feeding-green, next August, or in September, when pasture fields are often as dry and parched as a barren desert. Should such feed not be required while green, the stalks and leaves, if properly cured, will make excellent dry fodder. Moreover if a crop of Maize is not wanted for green or dry feed, it may be ploughed under, to ameliorate the stubborn condition of a heavy and lumpy soil. Four bushels of Indian-corn per acre will furnish more than three times the amount of vegetable matter for fertilizing a poor soil, than a crop of red clover, peas, or any other material that farmers are accustomed to raise for such purposes. When heavy soils are destitute, in a great degree, of fine mould, which is always eminently essential to the production of bountiful crops of grain and roots, the ground will be extremely lumpy and

difficult to till ; and should there be an excess of moisture in the soil, in warm weather, the ground will bake, and thus prevent crops of any kind attaining that great development which is obtained when the soil is dry, and well supplied with vegetable mould. When red clover or peas are plowed under for the purpose of renovating the soil, if Indian-corn be put in as soon as practicable after the ground is ploughed, a heavy burden of stalks will grow before frosts occur to injure their growth, which also may be ploughed in, and thus furnish the barren land with two dressings of green manure in a single season.



Planted in hills. Sowed thick broadcast. Sowed thin broadcast.

PREPARATION OF SOIL AND SEEDING.

The accompanying illustration will furnish the beginner in this branch of agriculture with some correct notions concerning the growth of Maize. The plants at the left hand represent a hill of Indian-corn, where the stalks grow tall, large, and heavy, having large butts and joints, which cattle will not eat, unless they are well cured and cut into short pieces. The middle figure represents Maize as it appears when the grain is sowed thick. The stalks are small and much more tender than when the seed is sowed thin. The figure at the right hand represents the appearance of Maize that was sowed moderately thick.

In order to produce a bountiful crop of Maize, plow under a liberal dressing of barn-yard manure, always remembering to break up the ground when it is just moist enough to crumble easily. Heavy ground should not be broken up when the

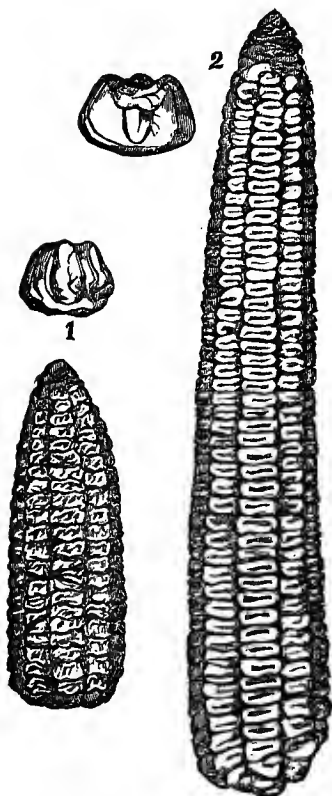
furrow slices will turn over in clods. Let the ground be harrowed; and if a grain drill is at hand, drill in the seed, about three inches deep, at the rate of four bushels per acre. A drill is better for putting in such grain than to sow it broadcast, and harrow it in, as a drill will bury all the kernels at a uniform depth, whereas much of the seed will not be covered at all if harrowed in; and a large portion will often be covered so slightly that the young plants cannot flourish luxuriantly.

Some farmers prefer to put in the seed with a corn planter, in drills about thirty inches apart, which will allow a horse-hoe to work between the drills. Others mark out the ground with a small plough, making channels three inches deep, about thirty inches apart, into which the grain is dropped, or scattered by hand. The seed is then covered by hitching a horse to a small log, five or six feet long, and drawing it sideways over two rows at once. This is a rapid and efficient way to cover the seed when a person has no drill.

The tall white flint, or eight-rowed yellow corn, in our latitude, is the best variety for producing green fodder, whether the crop is to be fed green, or cured, or ploughed under. On many farms there are several acres covered with nothing but noxious weeds, which may every season be made to yield an abundant crop of excellent feed, if properly managed.

HOW TO CURE THE STALKS.

As soon as the Maize is in full bloom, let it be cut, bound in small sheaves, and set up in long shocks in dry weather. During protracted storms, the sheaves should be put in round shocks, and the tops bound tightly to turn as much of the rain as possible. If a person have hay-caps, one may be put on every shock, and thus keep the stalks dry. In pleasant weather, the caps should be removed. When a person has an abundance of barn-room, the sheaves may be set up on open floors, or poles placed on the beams of the building, so that the air may circulate through the stalks. A ton of Maize, well cured, will produce more rich milk than a ton of good hay.



Narragansett Corn. New Jersey White, $\frac{1}{2}$ Dent.

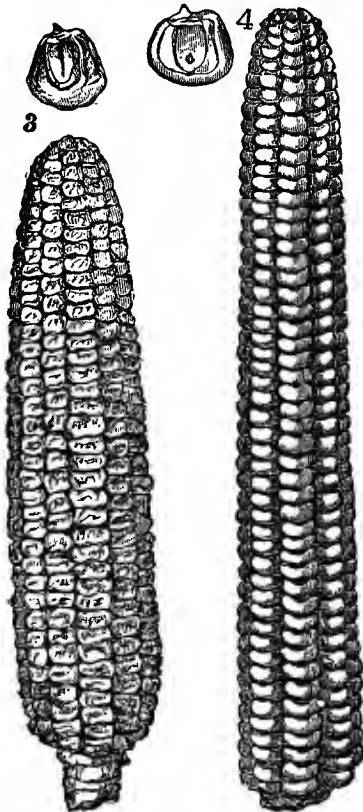
DESCRIPTION OF ILLUSTRATIONS.

Figure 1 represents an ear of Narragansett Corn, which was originated near the Narragansett Bay, Rhode Island, and is highly esteemed by many gardeners.

Figure 2 is the New Jersey White, $\frac{1}{2}$ dent, which is an excellent variety, yielding bountifully in most localities. All the varieties illustrated in this book, and many other kinds, can be obtained at most seed stores in our large cities.

Figure 3 represents the Rhode Island Asylum Corn.

Figure 4 is the Tuscarora Corn, which was originated by the tribe of Tuscarora Indians, in Niagara county, N. Y. It needs improving by selecting the earliest ripened ears for a few years.



Rhode Island Asylum Corn.

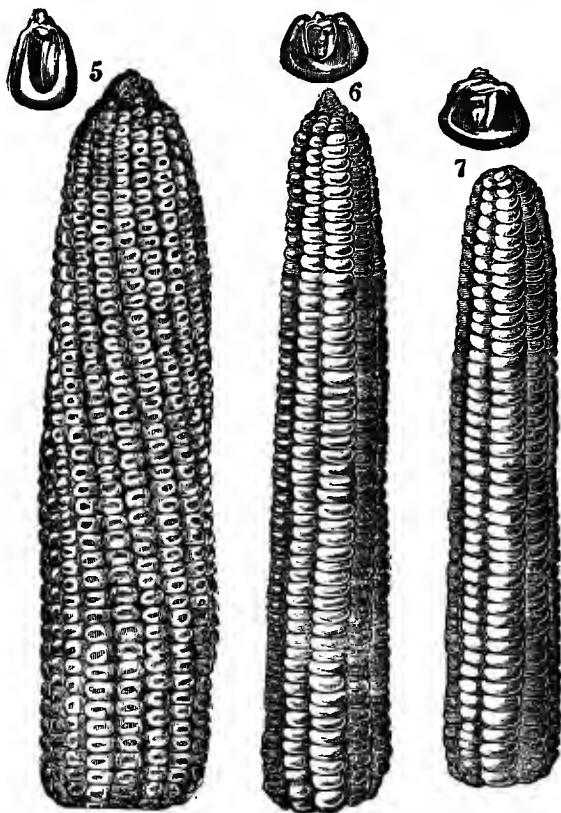
Tuscarora Corn.

Figure 5 is the Ohio Dent Corn, which will yield more bushels per acre, in certain States, than can be produced by planting any other variety.

Figure 6 represents the King Philip Corn, which is an 8-rowed

variety, having large kernels, long ears, and small cobs. It is an excellent kind of corn for most localities, although in some States it does not succeed satisfactorily. The Improved King Philip is considered a superior variety, not only for market but for meal for home consumption

Figure 7 represents a variety highly esteemed, known as the Rhode Island Premium Corn. The varieties of Indian-corn are almost without number. Some are not worthy of cultiva-



Ohio Dent Corn.

King Philip Corn. Rhode Island Premium Corn.

tion, while others succeed most satisfactorily wherever the soil will produce a large crop of any kind of corn.

METHOD OF CULTIVATING THE HOP.

HOUBLON. *Humulus lupulus*.

Although the Hop is not a culinary vegetable, yet, as it is more or less used in every part of our country, it may not be amiss to treat of its culture. As a great deal depends on the manner in which Hops are cured, I propose giving directions for their management throughout, so as to enable those who choose, to prepare their own. My information is collected chiefly from Loudon's Encyclopædia of Plants.

“The Hop has been cultivated in Europe an unknown length of time for its flowers, which are used for preserving beer. Its culture was introduced from Flanders in the reign of Henry the Eighth; though indigenous both in Scotland and Ireland, it is little cultivated in those countries, owing to the humidity of their autumnal season. Like other plants of this sort, the Hop bears its flowers on different individuals; therefore, the female plants alone are cultivated.”

NAMES OF DIFFERENT VARIETIES.

“There are several varieties grown in Kent and Surrey, under the name of Flemish, Canterbury, Goldings, etc.; the first is the most hardy, differing little from the Wild or Hedge Hop; the Golding is an improved and highly productive variety, but more subject to blight than the other. Besides these are the Farnham, or Golden Grape, which is cultivated for an early crop; and for late picking, the Mayfield Grape, or Ruffler, is esteemed, which is a dwarfish variety. Great caution is necessary lest the varieties get mixed, as they will not ripen nor dry equally, and consequently cannot be of one uniform color and quality. In the Hop-growing districts of the State of New

York, where Hops constitute the principal crop of the farm, the Pompey Hop, Grape Hop, and English Cluster are most productive. Still, the Pompey Hop, it is said, is more liable to be injured by rust and insects than the other varieties.

PREPARATION OF SOIL AND PLANTING.

“The Hop prefers a deep loamy soil on a dry bottom; a sheltered situation, but at the same time not so confined as to prevent a free circulation of air. The soil requires to be well pulverized and manured previous to planting. In Hop districts, the ground is generally trenched either with a spade or subsoil plough; and if the ground is at all wet it must be thoroughly under-drained, as Hops will not grow luxuriantly and produce abundantly when there is an excess of water in the soil. The ground requires as thorough preparation for Hops as for a crop of wheat or roots.

“The ground is marked out with a plough, making drills three or four inches deep, and six to nine feet apart. Some experienced Hop-growers say the rows should never be nearer than nine feet in rows both ways. By some, five, six, or seven plants, are placed in a circular form, which circles are distant five or six feet from each other.

“The sets or cuttings are procured from the most healthy of the old stools; each should have two joints or buds. From the one which is placed in the ground the root springs; and from the other, the stalk. Some plant the cuttings at once, covering them with mellow soil about two inches deep, where they are to remain; and by others they are nursed a year in a garden. An interval crop of Beans or Cabbage is generally taken the first year. Sometimes no poles are placed at the plants till the second year, and then only short ones of six or seven feet. The third year the Hop generally comes into full bearing, and then from four to six poles, from fourteen to sixteen feet in length, are placed to each circle: or one pole to each plant, if cultivated in straight rows. The plan adopted for the most part at the present time, is to set stakes about

eight feet high at every hill, and attach tarred twine to the tops all over the field. This is called horizontal cultivation. The stakes should be about one and a half inches square, of durable timber, and the whole stake dipped in a trough of coal-tar, to prevent decay and repel insects.

CULTIVATION AND TRAINING.

“The after-culture of the Hop consists in stirring the soil, and keeping it free from weeds; in guiding the shoots to the poles, and sometimes tying them for that purpose with bass or withered rushes; in eradicating superfluous shoots which may rise from the root, and in raising a small heap of earth over the root to nourish the plant; although, if the ground be not excessively wet, it is better to hill but little. Rows of Beans may be planted between the rows of Hops, without injury to the crop of Hops. Grass and weeds must be kept subdued by the repeated use of the horse-hoe and hand-hoes, through the entire growing season.

“Some persons cultivate only a few hills of Hops for the use of their own families; and the hills are planted near the dwelling, and the vines trained on cords over the window. Sometimes the vines are allowed to run thirty feet high. This is objectionable, as such a great length of vine is produced at the expense of the crop of Hops. After the vines have attained a certain height, if there is no support they will soon cease to run; and the energies of the plants will be employed in producing Hops.

“As the Hop is a staminate or male, and pistillate or female plant, if the vines be unproductive, some of the barren hills should be dug up, and others that will bear well set in their places. In field cultivation, the most successful growers of Hops plant about every ninth hill with sets from a staminate or male stalk. By this means all the vines will be fertilized and rendered productive.

“A person should pass through the field every few days, and aid the vines in twining to their supports. It is a striking

characteristic of the Hop, as well as of beans, that the climbers always ascend in one direction. Hops run from right to left, and beans in the opposite direction. And if the runners be put around the pole in an opposite direction, and secured there, the ends will turn about as soon as they are free, and go up the pole, or twine the other way. Hop-vines turn around a pole in the same direction that the sun appears to revolve around the earth.

WHEN AND HOW TO PICK.

“Hops are known to be ready for gathering when the chaffy capsules acquire a brown color, and a firm consistence. Each chaffy capsule, or leaf calyx, contains one seed. Before these are picked, the stalks are detached, and the poles pulled up, and placed horizontally on frames of wood, two or three poles at a time. The hops are then picked off by women and children. After being carefully separated from the leaves and stalks, they are dropped into a large cloth hung all around within the frame on teuter-hooks. When the cloth is full, the Hops are emptied into a large sack, which is carried home, and the Hops laid on a kiln to be dried. This is always to be done as soon as possible after they are picked, or they are apt to sustain considerable damage, both in color and flavor, if allowed to remain long in the green state in which they are picked. In very warm weather, and when they are picked in a moist state, they will often heat in five or six hours. For this reason, the kilns are kept constantly at work, both night and day, from the commencement to the conclusion of the Hop-picking season.

“Some Hop-growers, however, prefer large boxes made of thin boards for receiving the Hops as they are picked. These boxes have handles screwed to their sides, so that two persons may handle a boxful conveniently.”

MANNER OF DRYING HOPS.

“The operation of drying Hops is not materially different

from that of drying malt; and the kilns are of the same construction. The hops are spread on a hair cloth, from eight to twelve inches deep, according as the season is dry or wet, or the Hops ripe or immature. When the ends of the Hop-stalks become quite shrivelled and dry, they are taken off the kiln, and laid on a board floor till they become quite cool, when they are put into bags. When only a small quantity is raised, they can be spread on a clean floor a few inches deep, and stirred every day till they are quite dry, after which they should be stored in sacks made of coarse cloth."

MANNER OF BAGGING.

"The bagging of Hops is thus performed. In the floor of the room where Hops are laid to cool, there is a round hole or trap, equal in size to the mouth of a Hop-bag. After tying a handful of Hops in each of the lower corners of a large bag, which serve for handles, the mouth of the bag is fixed securely to a strong hoop, which is made to rest on the edge of the hole or trap; and the bag itself being then dropped through the hole, a packer goes into it, when a person who attends for the purpose, puts in the Hops in small quantities, in order to give the packer an opportunity of packing and trampling them as hard as possible. When the bag is filled, and the Hops trampled in so hard that it will hold no more, it is drawn up, loosened from the hoop, and the end sewed up, two other handles having been previously formed in the corners in the manner mentioned above. The brightest and finest-colored Hops are put into fine bagging, and the brown into coarse or heavy bagging. The former are chiefly used for brewing fine ale, and the latter by the porter brewers. But when Hops are intended to be kept two or three years, they are put into bags of strong cloth, and firmly pressed with a screw so as to exclude the air." Hops are also pressed into small packages, in paper bags, weighing half a pound and upwards, to suit the wants of small families.

YIELD PER ACRE.

“The produce of no crop is so liable to variation as that of the Hop. In good seasons an acre will produce 20 cwt., but from 10 to 12 cwt. is considered a tolerable average crop. The quality of Hops is estimated by the abundance or scarcity of an unctuous clammy powder which adheres to them, and by their bright-yellow color. The expenses of forming a Hop plantation are considerable; but once in bearing, it will continue so for ten or fifteen years before it requires to be renewed. The Hop is peculiarly liable to diseases; when young it is devoured by fleas of different kinds; at a more advanced stage, it is attacked by the green fly, red spider, and ottermoth, the larvæ of which prey even upon their roots. The honey-dew often materially injures the Hop crop; and the mould, the fire-blast, and other blights, injure it at different times towards the latter period of the growth of the plant.”

The Hop is considered somewhat precarious; but when the season is good, the profit is very great. The average product may be stated at 700 lbs., though it has reached 1600 lbs. to the acre; and in the latter case the expenses amounted to sixty dollars. The ordinary, or average price, may be stated at eighteen cents per pound. The profits on an ordinary crop, according to these assumed data, would be about seventy dollars to the acre. It often falls materially short of this, however, from the want of knowledge and care in gathering and drying the crop.

MEDICINAL PROPERTIES.

The young shoots of both wild and cultivated Hops are considered by some as very wholesome, and are frequently gathered in the spring, boiled, and eaten as Asparagus. The stalks and leaves will dye wool yellow. From the stalk a strong cloth is made in Sweden; and the mode of preparing it is described by Linnæus in his *Flora Suecica*. A decoction of the roots is said to be as good a sudorific as Sarsaparilla; and

the smell of the flowers is soporific. A pillow filled with Hop flowers will induce sleep, unattended with the bad effects of soporifics which require to be taken internally.

STACKING THE POLES.

“The stripping and stacking of the poles succeed, to the operation of picking. The shoot or bind being stripped off, such poles as are not decayed, are set up together in a conical pile of three or four hundred, the centre of which is formed by three stout poles bound together a few feet from their tops, and their lower ends spread out. A flat stone, or piece of board, should be placed under every pole to keep the moisture from rising in the wood, which, if not prevented, will hasten the decay of the poles about as fast as if they were in the ground. Those who propose to raise Hops on a large scale, should visit some of the Hop-growing districts in the northern counties of New York, or other States, and examine the modes of culture and kilns for drying.

LEEK. POIRREAU. *Allium porrum.*

VARIETIES.

Scotch, or Flag.

|

Large London.

This is a wholesome and useful herb, and is so hardy as to endure the extremes of heat and cold without injury. The seed may be sown in March, or early in April, in a bed of rich earth, in drills about an inch deep, and a sufficient distance apart to admit of a small hoe being worked between the rows, allowing one ounce of seed for every three thousand plants that may be required.

If the ground be kept loose and clean around the plants, they will be fit to transplant in June, or early in July, and should be set out in good ground, in rows twelve inches asunder, and the plants five or six inches apart in the rows. They

will grow well in a warm border, which at this season is useless for many kinds of vegetables. After the plants have taken root, they should be frequently hoed, and kept free from weeds.

Those who wish to have Leeks blanched, may plant them in trenches three or four inches deep, and as the plants increase in growth, the earth should be drawn by a hoe into the trenches.

LETTUCE.

LAITUE. *Lactuca sativa crispa.*

It would be easy to furnish a more extensive catalogue of Lettuce, as the varieties are numerous; but as this is one of those kinds of vegetables that can only be raised in perfection during mild and temperate weather, it is needless for the gardener to plant any in the open ground but such as have been tested, and found to stand a tolerable degree of warm weather, which generally prevails in May and June, and consequently cuts short the salad season. Those who have been accustomed to raise head Lettuce in any quantity, know the trouble of preparing the ground and planting, and the loss they would sustain if several thousand plants should run to seed just as they appeared to be perfecting for market. As this is often the case, even with the very best attention, I would caution gardeners to test such plants as they are not acquainted with, before they set out any quantity with a view to their heading.

Lettuce seed of most varieties may be sown from the first to the middle of September, in rich ground free from weeds; they answer very well when sown with Spinach, and should be covered with straw at the approach of severe weather. These plants, if transplanted into warm borders, or in the open ground, as early in March as the weather will permit, will produce fine heads early in the month of May.

The best of the tender kinds of Lettuce should be sown in moderate hotbeds early in March, and if transplanted into good ground by the middle of April, will produce their heads before the approach of warm weather. Such kinds as are known to produce heads in hot weather, also such as are intended to be cut as a small salad while young, may be sown in warm borders in March and April; but those designed for heading should be transplanted as soon as they are an inch or two in height, and kept in a growing state by frequent hoeing, or they may run up to seed as the season advances.

If it be an object with the gardener to have good strong Lettuce plants for transplanting, the seed should be sown very thin. One ounce of good seed is sufficient for a border of six feet in width by eighteen feet in length, and will produce from ten to twelve thousand plants. All kinds of Lettuce intended for heading should be planted in good ground, twelve inches distant from each other every way; the plants should be carefully hoed every other week during their growth. The first hoeing should be done in about two weeks after they are transplanted.

The Coss Lettuce requires to be blanched. This is done by gathering up the leaves of the plants and tying bass around them, when grown to perfection. If Head Lettuce be required at other seasons than the spring, it may be obtained in autumn by sowing seed in August, or in the winter by means of garden frames and glazed sashes. (*See article on Forcing Vegetables.*)

Moisture is the most essential nutriment of Lettuce; and the best varieties may run to seed without forming heads, in the event of extreme dry weather. Those who put off the sowing of seed until May and June, instead of sowing it in March and April, as directed, may procure head Lettuce from some of their strongest plants by transplanting them into rich ground as soon as they are an inch or two in height, and the remainder, if left thin in the beds, may produce small heads by stirring the earth around them with a small hoe or weeding-hook. These are as good for family use as larger heads,

and those persons who are fond of Lettuce may raise such throughout the summer. But market gardeners seldom attempt it, unless they have a tract of moist, loamy soil, peculiarly adapted to the growth of head Lettuce, in anything like a propitious season.

Where the soil in a garden is heavy, by mingling a load of sand with a small plot of ground for a bed of Lettuce, heads may be obtained much sooner than they will grow in a heavy soil.

MELON.

MELON. *Cucumis melo.*

The Melon is an exotic plant, growing wild in Asa. It is cultivated in all the warm countries of Europe, and also in Africa and America, where its salubrious and cooling fruit is generally esteemed.

For the varieties of the Musk or Canteleupe Melons, prepare a piece of rich ground early in May; manure, and give it a good digging; then mark it out into squares of six feet every way. At the angle of each square, dig a hole twelve inches deep and eighteen broad, into which put about six inches of old, rotten dung. Throw thereon about four inches of earth, and mix the dung and earth well with the spade; after which draw more earth over the mixture, so as to form a circular hill about a foot broad at top. When your hills are all prepared, plant in each, towards the centre, six or eight grains of seed, distant two inches from each other, and cover them half an inch deep. One ounce of good Melon-seed will plant about one hundred and twenty hills.

When the plants are in a state of forwardness, producing their rough leaves, they must be thinned to two or three in each hill. Draw earth from time to time around the hills and about the roots of the plants. As soon as the plants

have spread into branches, stop them by pinching off the top of the first runner-bud. This will strengthen the plants and promote their perfecting the fruit early. After this keep the ground free from weeds by frequent hoeing.

There are many varieties of the melon, highly esteemed in Europe, which do not succeed in this country; the gardener should, therefore, plant only such as have been tested and found to produce good fruit here, or our superior old sorts may become degenerated. After a judicious selection is made, if caution be not used to plant the different sorts remote from each other, and from Cucumbers, Squashes, and Gourds, degeneracy will infallibly be the consequence. To prevent the ravages of flies, etc., see General Remarks, Chap. I.

WATER MELON.

MELON D'EAU. *Cucurbita citrullus.*

The Water Melon, though by some considered a species of the former, is a distinct genus of exotic plants. They afford a very refreshing article of luxury in our warm summers. In order to have Water Melons in perfection, you must fix upon a piece of very rich, light soil; prepare, plant, and manage it in every respect as is directed for Musk Melon, only let the hills be seven or eight feet distant every way. One ounce of seed will plant from forty to fifty hills.

Some persons, who have a soil as rich as manure can make it, can never succeed in raising Water Melons, because there is too large a proportion of clay in the soil. In order to raise large Melons, a rich, sandy soil, or a sandy loam, is essential. I have known Water-Melon seed planted where the ground was so productive as to yield forty bushels of Wheat, or eighty of Indian Corn per acre, when a Melon of fair size and quality could not be obtained with the best of cultivation.

FORWARDING MELONS UNDER HAND-GLASSES.

The directions already given for maturing Cucumbers under glass will apply to Melons, with very few exceptions. Care, however, must be taken that they be kept away from each other at the time of fruiting, as instances often occur of whole crops being entirely ruined by plants of the same genus being raised too near each other. Those who wish to forward Melons may prepare a hotbed, early in the season, for plants. If the ridging system be adopted, and a hand-glass applied to each hill, Melons may be obtained one month earlier than the usual time.

Gardeners raising Melons for the supply of city markets, may gratify the public taste early in the season by pursuing the forwarding, if not the forcing system. Ridges may be prepared in the following manner: In April or May a trench may be dug in a warm border, about two feet deep and three wide, and of sufficient length for as many hand-glasses as are intended to be employed, allowing three feet for every hill. Some good heating-manure should be laid in the pits, managed the same as a common hotbed. To this must be added rich mould to the depth of eight or ten inches. As soon as the mould is warm, the seedlings may be planted, three in each hill, after which the hand-glasses should be set on, and shaded. After the plants have taken root and begin to grow, one side of the glasses should be raised in fine days to admit fresh air; and as the warm weather progresses, the glasses may be taken off in the middle of fine days, so as to harden the plants gradually to the weather; and by the latter part of May they may be removed entirely.

Those persons who live at a great distance from a glass-works may make a protection for Melon-hills by making wooden boxes, without bottom or top, about ten inches wide and fourteen inches long. Then, one pane of glass, ten by fourteen, simply laid on a box, will subserve the purpose of an excellent bell-glass. Such boxes should be at least eight inches

high, else the young plants will not have sufficient room to push upwards.

MUSTARD.

MOUTARDE. *Sinapis.*

The *Alba*, or White Mustard, grows spontaneously in the fields of England; it is also cultivated as a small salad, as well as for seed. The seed yields from every hundred pounds, from thirty-three to thirty-six pounds of sweet, mild oil.

White Mustard Seed is much used as a medicine, and persons subject to disordered stomachs often derive great benefit by taking a spoonful of the dry seed two or three times a day. Some use it in pickles, to which it imparts an agreeable flavor, and renders Cucumbers, in particular, more salutary.

The *Nigra*, or Common Mustard, is also a native of England. The condiment called Mustard, and in daily use at our table, is prepared from the seed of this species. The seed of each variety may be sown in clean, rich ground in April and May; and for a fall salad in September, in shallow drills.

MUSHROOMS.

HOW TO DISTINGUISH THE GOOD FROM THE POISONOUS.

The *Agaricus* is said to be the most extensive genus in the vegetable kingdom. The species are determined upon various principles. As some of the kinds are poisonous, it is necessary to describe the eatable Mushroom. Loudon says, it is most readily distinguished when of a middle size, by its fine pink or flesh-colored gills, and pleasant smell. In a more advanced age, the gills become of a chocolate color, and it is then more apt to be confounded with other kinds of doubtful quality;

but that species which most nearly resembles it is slimy to the touch, destitute of fine odor, and has a disagreeable smell.

Again; the noxious kinds grow in woods, while the true Mushroom springs up chiefly in open pastures, and should be gathered only in such places. Unwholesome *fungi* will sometimes spring up on artificial beds in gardens. Sometimes, when the spawn begins to run, a spurious breed is often found to precede a crop of genuine Mushrooms. The poisonous toad-stool, *Agaricus cirocus*, may generally be detected by the presence of a sickly, nauseous smell, though some hurtful kinds are so free from anything disagreeable in the smell as to make any criterion, drawn from that alone, very unsafe. The wholesome kinds, however, invariably emit a grateful, rich odor.

In order to ascertain whether what appear to be Mushrooms are of the true edible kinds, sprinkle a little salt over the inner or spongy part; if, in a short time after, they turn yellow, they are unwholesome; but if black, they may be considered as genuine Mushrooms.

FORCING MUSHROOMS AT ALL SEASONS.

Mushrooms may be obtained at any season of the year, by a proper regulation of the time and manner of forming the beds. A good crop is sometimes collected without making a bed on purpose, by introducing lumps of spawn into the top mould of old hotbeds. The *Agaricus campestris* is most generally cultivated. Dr. Withering mentions other eatable varieties, which grow considerably larger, but are inferior in flavor; he says "that a plant of the variety Georgia was gathered in an old hotbed at Birmingham, which weighed fourteen pounds; and Mr. Stackhouse found one fifty-four inches in circumference, having a stem as thick as a man's wrist."

The methods of procuring, and propagating spawn, and of forming Mushroom beds, are numerous. Indigenous spawn may be collected in pasture lands in September and October, or it may be found in its strength and purity in the paths of mills worked by horses, or in any other horse-walks under

shelter; it is frequently found in old hotbeds and dunghills in the summer season, and Mushrooms of good quality may often be seen beginning to form on the surface, like large peas. When these are absorbed it is time to take out the spawn, which is generally in hard, dry lumps of dung, the spawn having the appearance of whitish coarse pieces of thread. The true sort has exactly the smell of a Mushroom. If spawn thus collected be required for immediate use, it may be planted in the beds at once, or it will keep three or four years, if laid to dry with the earth adhering to it, and afterwards placed in a warm, dry shed, where there is a current of air; but if it be not completely dried the spawn will exhaust itself or perish, as it will not bear the extremes of heat, cold, or moisture.

HOW TO MAKE MUSHROOM-BEDS.

Mushroom-beds are simply heaps of animal dung and earth, so tempered as to be capable of producing and preserving spawn; but in order to have fruitful spawn at all times, it should be so formed as to be always at command. To this end, a quantity of fresh horse-droppings mixed with short litter should be collected. Add to this one-third of cow-dung and a small portion of good earth, to cement it together; mash the whole into a thin compost, like grafting-clay; then form it in the shape of bricks; which being done, set them on edge, and frequently turn them until half dry; then with a dibble make one or two holes in each brick, and insert in each hole a piece of spawn the size of an egg; the bricks should then be laid where they can dry gradually. When dry, lay dry horse-dung on a level floor, six or eight inches thick; on this pile the bricks, the spawn side uppermost. When the pile is snugly formed, cover it with a small portion of fresh warm horse-dung, sufficient in quantity to produce a gentle glow through the whole. When the spawn has spread itself through every part of the bricks, the process is ended, and they may be laid up in any dry place for use. Mushroom spawn..made according to this receipt, will preserve its vege-

tating powers for many years, if well dried before it is laid up; if moist, it will grow, and soon exhaust itself.

Mushroom-beds are often formed in ridges in the open air, covered with litter and mats, so as to prevent heavy rains exciting a fermentation; and sometimes in ridges of the same sort, under cover, as in the open sheds of hot-houses. They are also made in close sheds, behind hot-houses, or in houses built on purpose, called Mushroom-houses. A moderately warm, light cellar is peculiarly suited for the purpose, in the winter season, as no fire is necessary, and but little water—the application of which frequently proves injurious when not judiciously managed. Mushrooms may also be raised in pots, boxes, hampers, etc., placed in warm situations; also in old beds, in pits with glazed frames, and in dark frames or pits.

The general way of making Mushroom-beds is to prepare a body of stable-dung, moderately fermented, about a yard in thickness, more or less, according to the size and situation in which the bed is to be formed. When the strong heat has subsided, an inch of good mould may be laid over it, and the spawn planted therein in rows five or six inches apart. After this is done, another layer of mould, an inch thick, may be added, and then a coat of straw. Beds well constructed will produce Mushrooms in five or six weeks, and will continue to produce for several months, if care be taken in gathering not to destroy the young ones. As Mushrooms are gathered from time to time, the straw should be spread carefully over the bed.

Beds made in a convenient place, where there is space all around, may be formed so as to make four sloping surfaces, similar to the roof of a house, which, by being spawned on the four sides, will yield abundantly. The celebrated Mr. Nichol makes his beds without spawn. The following are his directions, taken from Loudon's Encyclopædia of Gardening:

“After having laid a floor of ashes, stones, chips, gravel, or brick-bats, so as to keep the bed quite dry and free from underdamp, lay a course of horse-droppings six inches thick. These

should be new from the stables, and must not be broken, and the dryer the better. They may be collected every day until the whole floor or sole be covered to the above thickness; but they must not be allowed to ferment nor to heat. In the whole process of making up, the bed should be as much exposed to the air as possible; and it should be carefully defended from wet, if out of doors. When this course is quite dry, and judged to be past a state of fermentation, cover it to the thickness of two inches with light, dry earth; if sandy, so much the better. It is immaterial whether it be rich or not; the only use of earth here being for spawn to run and mass in. Now lay another course of droppings, and earth them over as above, when past a state of fermentation: then a third course, which, in like manner, earth all over. This finishes the bed, which will be a very strong and productive one, if properly managed afterwards.

“Observe, that in forming the bed, it should be a little rounded, in order that the centre may not be more wet or moist than the sides. This may be done in forming the sole or floor at first, and the bed would then be of equal strength in all parts. If it be made up against a wall in a cellar, stable, or shed, it may have a slope of a few inches from the back to the front, less or more, according to its breadth. I have sometimes been contented with two courses as above, instead of three; and often, when materials were scarce, have made them up slighter, thus: three four-inch courses of droppings, with one inch of earth between each, and a two-inch covering at top. Such a bed as this I have had produce for ten or twelve successive months; yet very much depends on the state of the materials, on the care taken in making up the beds, and on the after-management.

“The droppings of hard-fed horses only are useful. Those of horses kept on green food will, of themselves, produce few or no Mushrooms. I have made up beds from farm-horses, fed partly on hard and partly on green food, and from carriage or saddle-horses, fed entirely on corn or hay, treated them in

the same way in every respect, and have found, not once, but always, those made from the latter most productive. Dropplings from hard-fed horses may be procured at the public stables in towns, or at inns in the country, any time of the year; and if the supply be plentiful, a bed of considerable dimensions may be made and finished within five or six weeks. In as many more weeks, if in a stable or dry cellar, or shed, it will begin to produce, and often sooner; but if the situation of the bed be cold, it will sometimes be two or three months in producing Mushrooms."

EXTREMES OF TEMPERATURE SHOULD BE AVOIDED.

It may be necessary to state further, that extremes of heat, cold, drought, and moisture should be avoided in the cultivation of Mushrooms. If the temperature keeps up to 50° in the winter, the beds will be safe, and the heat in the beds may rise to 60° or even 70° without injury. Air also must be admitted in proportion to the heat, and 60° should be aimed at as a medium temperature. Water, when given a little at a time, is better than too much at once, after the spawn has begun to spread; and the water for this purpose should always be made blood-warm. A light covering of straw may be used to preserve moisture on the surface; and if the beds are made in open frames, or otherwise subject to exposure, the straw may be laid thicker than on beds made in a cellar.

Should beds fail in producing Mushrooms after having been kept too hot or too wet, it may be inferred that the spawn is injured or destroyed; but if, on the contrary, a bed that has been kept moderately warm and dry should happen to be unproductive, such bed may be well replenished with warm water, and a coat of warm dung may be laid over the whole. If this does not enliven the bed, after having lain a month, take the earth off; and if, on examination, there is no appearance of spawn, the whole may be destroyed. On the contrary, should the bed contain spawn, it may be renovated by covering it again, especially if any small tubercles be discernible.

If the heat should have declined, the spawn may be taken out and used in a fresh bed. If beds be formed in hotbed frames under glass, some mats or straw must be laid over the glass to break off the intense heat of the sun.

Although only one species of *edible fungi* has yet been introduced into the garden, there are several eatable kinds. In Poland and Russia there are above thirty kinds in common use among the peasantry. They are gathered at different stages of their growth, and used in various ways—raw, boiled, stewed, roasted; and being hung up, and dried in their stoves and chimneys, form a part of their winter stock of provisions. Great caution is necessary in collecting Mushrooms for food; and none but the botanist should gather any but the kinds we have described. Physicians say, “that all the edible species should be thoroughly masticated before they are taken into the stomach, as this greatly lessens the effect of poisons. When accidents of the sort happen, vomiting should be immediately excited, and then the vegetable acids should be given, either vinegar, lemon-juice, or that of apples; after which give ether and antispasmodic remedies, to stop the excessive vomiting. Infusions of gall-nut, oak bark, and Peruvian bark are recommended as capable of neutralizing the poisonous principle of Mushrooms.” It is, however, the safest way not to eat any but the well known kinds.

NASTURTIUM, OR STURTION.

CAPUCINE. *Tropæolum.*

THIS is an annual plant, a native of Peru, and is highly deserving of cultivation for the sake of its brilliant orange and crimson-colored flower, as well as for the berries, which, if gathered while green and pickled in vinegar, make a good substitute for capers, and are used in melted butter, with boiled mutton, etc.

The seed should be sown in April, or early in May, in drills about an inch deep, near fences or pales; or trellises should be constructed, on which they can climb and have support; for they will always be more productive in this way than when suffered to trail on the ground.

OKRA. GOMBO. *Hibiscus, esculentus.*

The green capsules of this plant are used in soups, stews, etc., to which they impart a rich flavor, and are considered nutritious. Its ripe seed, if burned and ground like coffee, can scarcely be distinguished therefrom.

The seed should be planted in good rich ground, the first or second week in May, if settled warm weather, but not otherwise, as it is a very tender vegetable. Draw drills about an inch deep, and three or four feet asunder, into which drop the seed at the distance of six or eight inches from each other, or rather drop two or three in each place, lest the one should not grow, and cover them nearly an inch deep. As the plants advance in growth, thin them out, earth them up two or three times, and they will produce abundantly.

ONION. OIGNON. *Allium cepa.*

Of the several varieties of Onions, the Yellow or Silver Skinned, and Large Red, are the best for a general crop. The bulbs are handsome, of firm growth, and keep well through the winter. The New England White are handsome for the table, and very suitable for pickling, as well as to pull while young, and generally prove a very profitable crop.

Previous to sowing Onion-seed for a general crop, the ground should be well prepared by digging-in some of the oldest and strongest manure that can be got. The earlier this is done in the spring, the better; and the planting should not be delayed longer than the middle of April. The seed may be sown moderately thick, in drills one inch deep and twelve inches apart. Those who cultivate Onions for the sake of their bulbs, may use at the rate of four or five pounds of seed per acre.

As market gardeners, in the vicinity of large cities, find it most profitable to pull a great proportion of their Onions while young, they generally require at the rate of from eight to ten pounds of seed to an acre of land.

When the plants are up strong, they should be hoed. Those beds that are to stand for ripening, should be thinned out while young, to the distance of two or three inches from each other. If a few should be required for use after this, those can be taken which incline more to tops than roots; and if the beds be frequently looked over, and the small and stalky plants taken away where they stand thickest, the remaining bulbs will grow to a larger size. The plants should be hoed at least three times in the early part of their growth; but if the season prove damp, and weeds vegetate luxuriantly, they must be removed by the hand, because after the Onions have begun to bulb, it would injure them to stir them with a hoe.

WHEN TO HARVEST ONIONS.

When the greenness is gone out of the tops of Onions, it is time to take them up; for from this time the fibrous roots decay. After they are pulled, they should be laid out to dry, and when dry, removed to a place of shelter.

The small Onions may be planted in the following spring. Even an Onion which is partly rotten will produce good bulbs, if the seed-stems be taken off as soon as they appear.

The *Allium fistulosum*, or Welsh Onion, is cultivated for spring salad; it forms no bulbs, but is very hardy. If the seed be sown early in September in rich ground, although the tops may die down in the winter, yet the roots in mild climates will continue sound, and put up new leaves early in the spring.

The *Allium cepa*, or common White and Red Onions, are most generally cultivated by market gardeners as a substitute for the *Allium fistulosum*. They sow the seed in the spring and autumn months, the product of which is pulled and sent to the market while young.

The *Allium proliferum*, or Tree Onion, is propagated by

planting the bulbs in spring or autumn, either the root bulbs, or those produced on the top of the stalks; the latter, if planted in the spring, will produce fine Onions. These may be planted in rows with a dibble, the same as Shallots.

The Potato Onion, *Allium tuberosum*, does not produce seed as other Onions, but it increases by the root. One single Onion, slightly covered, will produce six or seven in a clump, partly under ground. The bulbs are generally planted in the spring from twelve to eighteen inches apart; but they will yield better when planted in autumn, as they will survive the winter if slightly covered with dung, litter, or leaves of trees, etc.

WHEN TO SOW THE SEED.

Onion-seed may be sown at any time from March to September; but those only can be depended upon for ripening which are sown in the first and second spring months. It is a singular fact that Onions will not ripen later than August, or the early part of September, however warm the weather may be. They can, however, be preserved in the place where they grow, by spreading some short dung over them in autumn, just sufficient to prevent their being lifted out of the ground in winter. Onions thus preserved, often prove more profitable to market gardeners in the spring than crops which ripen; because ripe Onions are then scarce, and green ones prove a good substitute for Shallots, Welsh Onions, Leeks, etc.

PARSLEY. PERSIL. *Apium petroselinum*.

Parsley is a hardy biennial plant, and grows wild in moist climates, but has been greatly improved by cultivation. The leaves of the Common Parsley are used as a potherb, and those of the Extra Curled kinds make a fine garnish. The Large-Rooted are generally cooked for the table in autumn and winter, like Parsnips.

As Parsley-seed, sown late in the season, is apt to lie in the ground some time before it vegetates, and often fails in dry weather, the general crop should be sown in a cool situation by

the early part of April, in drills an inch deep, and one foot asunder, allowing at the rate of about six or seven pounds of seed to the acre, or two ounces for every three perches of land. After the plants are up, let them be kept clean by frequent hoeing. The Large-Rooted Parsley should be thinned out while young, and managed the same as Carrots and Parsnips.

In order to have Parsley green through the winter, the old leaves should be picked off in September. If some of the roots be taken up early in November, and laid in a frame, or light cellar, the leaves will keep green a long time. The remainder may be covered up with straw in the place where it grows. If Parsley-seed be sown in frames in spring or summer, it may be preserved for winter use without the trouble of removing it. It frequently happens that Parsley seed will remain in the ground three or four weeks without showing any signs of vegetation, and in the event of extreme dry weather, is apt to decay for want of its most essential aliment—MOISTURE. A few grains of Long Radish-seed, sown about an inch apart in each drill, are well adapted to promote the growth of Parsley; because Radish-seed being quick in germinating, will open the pores of the earth; and the plants, as they progress in growth, will create a shade sufficient to protect the Parsley from the full rays of the sun.

PARSNIP. PANAIS. *Pastinaca sativa.*

This is a hardy biennial plant, common in calcareous soils. It has long been an inmate of the garden, and forms a vegetable dish in the winter, with salt meat, salted fish, etc. Parsnip-seed may be planted from the middle of March till the middle of May, in drills one inch deep and fourteen inches apart; and as this vegetable requires a long season to grow in, the sooner the seed is planted the better. Parsnips grow best in a deep soil, which has been well manured the preceding fall. Sow the seed thick along the drills, at the rate of five or six pounds per acre, and rake them in evenly.

The Parsnip, although when in full growth it will endure the

extremes of heat and cold, requires peculiar management to promote and preserve germination in an early stage of culture. In order to give the seed a fair chance, it should be planted in ground susceptible of moisture, and not apt to encrust when dry. If cultivated in light ground, it should be rolled or pressed immediately after depositing the seed therein. But this should not be done while the earth is wet. A few grains of Long Radish-seed, sown in each drill as directed for Parsley, will also prove beneficial to Parsnips.

When the plants are two or three inches high, thin them to the distance of six or eight inches in the rows. They should be kept free from weeds, by regular hoeing through the summer; and in autumn they will be fit for use. They improve in flavor after having been frozen, and will endure the severity of a hard winter.

Parsnips require from thirty to forty minutes' boiling, according to their size and age. Some boil them in water seasoned with salt, until tender; but they are better when boiled with salt pork, and afterwards mashed and fried in butter.

PEPPER.

POIVRE OU PIMENT. *Capsicum.*

This family of plants is a native of the East and West Indies; some of their capsules, or pods, are yellow, and others red, when at maturity. They are much used for pickling, and should be gathered for that purpose before they are fully ripe.

The seed of the different kinds of *Capsicum* may be sown in a hotbed in March, or on a warm border, early in May. One ounce of seed will produce about three thousand plants. When the plants arrive at the height of from one to two inches, they should be transplanted into good rich ground, from eighteen inches to two feet distant from each other.

Those who do not want Peppers early in the season, may

sow seed in the open ground in May, in drills two feet asunder, and half an inch deep. When the plants are grown an inch or two high, thin them to the distance of fifteen or eighteen inches in the rows. The ground should be afterwards hoed deep around the plants, and kept free from weeds by repeated hoeings.

The *Capsicum Grossum*, or Bell Pepper, is perennial, and will keep in perpetual bearing in warm climates. In England this species is considered superior to all others, on account of its skin being thick, and also pulpy and tender. The plants are therefore frequently preserved in hot-houses during the winter and spring, and kept in the open air in settled warm weather.

PEAS.

POIS. *Pisum sativum*.

Peas will grow to different heights, according to soil and season. The Dwarf Pea require less distance between the rows and shorter sticks than the tall kinds; and sometimes no supports at all.

Planting the early kinds of Pea should commence as soon in the spring as the ground can be brought into good condition. All the other sorts, as well as the early, will answer for successive crops. A few of the most esteemed varieties should be planted at the same time every two weeks, from March until the end of May. Persons desirous of having Peas throughout the summer and autumn, may plant a few in June, July, and August. In dry weather the Peas should be soaked in soft water five or six hours before planting, and if the ground be very dry, it should be watered in the drills.

Gardeners practise different modes of planting Peas. Some plant them in ridges, others in drills; some in single rows, others in double; some use sticks for the dwarf kinds, and others not.

All the different sorts of Peas may be planted in double or single rows, from four to six feet apart, according to the different heights they may be expected to grow. If two drills be made three inches deep, and about nine inches apart, and the seed dropped along each drill moderately thick, they will yield better than single rows, and will save sticks. When the plants are two or three inches high, let them be hoed, drawing, at the same time, a little earth up to their stems. When they get to double that height, let them be hoed again. At the same time place a row of sticks or brush in the middle of your double rows, and a few shorter and smaller ones on the outside of each row, to assist the Peas in climbing to their main support. You must be governed as to the length of your sticks by the description of your Peas. There is great advantage in having sticks of a suitable height to the various kinds of Peas. The sticks should not only be sufficiently tall, but also branchy, that the plants may readily take hold; and they should be prepared fan-fashion, so that the side branches may extend only along the rows. As the plants progress in growth, let them be repeatedly hoed and earthed up; this will promote a plentiful bearing.

One quart of Peas will plant from one hundred and fifty to two hundred feet of row, allowing the largest kinds to average one inch apart, and the smallest two Peas to the inch.

To have green Peas in perfection, they should be gathered while young, and cooked immediately after they are shelled, or they will soon lose their color and sweetness. Let the water be slightly seasoned with salt, and boiled; then put in the Peas with a small bunch of Spearmint, and ease the cover so as to let off the steam. They require about fifteen minutes boiling, or five minutes more or less, according to the age and care bestowed.

FORCING PEAS IN HOTBEDS.

The best kinds of Peas to force, are those that are the most dwarfish, as they will bear earlier, and make less straw. Peas

run less to vine by being transplanted, than when they are sown where they are to remain; and the plants may be raised in a hotbed, or in pots or boxes. They do not require excessive heat, the temperature must be progressive, beginning at about 50° for the nursery-bed, and from that to 60° or 65° for fruiting. When the leaves of the plants are fairly expanded, they may be transplanted into rows from twelve to eighteen inches apart; and the earth in the fruiting-bed should be from twelve to eighteen inches in depth.

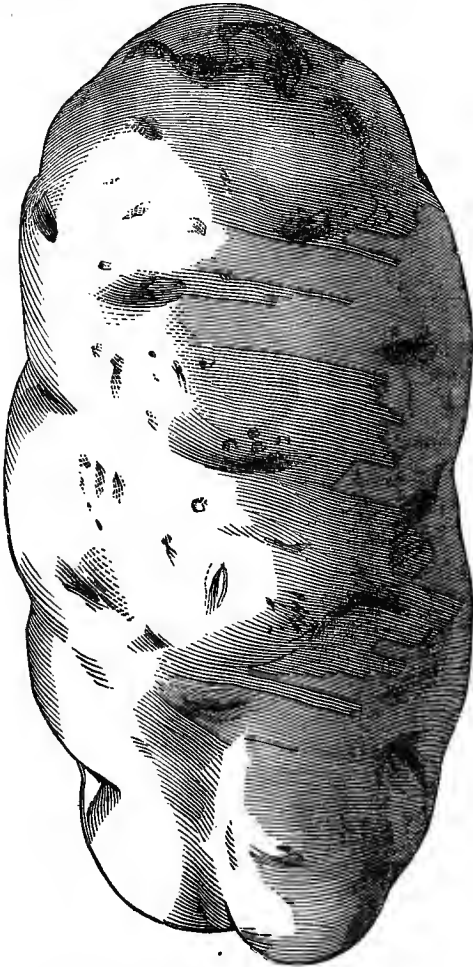
As the Peas progress in growth, the earth should be stirred; and when six inches high small sticks may be applied, so that the tendrils of the Peas may easily take hold; and they should be moulded at the bottom to enable them to support themselves. When they are in blossom pinch off the top. This will greatly promote the forming and filling of the pods. In dry weather Peas will require to be regularly watered; and as the spring advances, they may be exposed to the weather. Should cold storms occur, the tender vines must be protected with wide boards placed edgewise on both sides of the rows, and a board over the top until the weather has become warm. Such shields should be placed around other tender plants, when the weather is cloudy and cold, as they will grow more rapidly in a place where there is but little light, than when exposed to the light of day, chilling winds, and cold storms, with no sunshine. Cold winds and storms frequently chill plants so that they never recover.

POTATO.

POMME DE TERRE. *Solanum Tuberosum.*

The Potato is known to be a native of the southern parts of America, but has been greatly improved by cultivation. The varieties being very numerous, it is unnecessary to point out any particular kinds; some of the earliest should, however, be

planted first in the spring, to produce young Potatoes in due season; but they are not so suitable for a full crop as the late varieties.



"CUZCO."

The "Cuzco" potato yields well with good cultivation, is a good table potato, of large size, keeps well, brings a high price in market, and has been claimed to be "rot-proof." We have seen what were called the genuine "Cuzcos," that were raised in different parts of the country, and they were very unlike. Either the seed had not been kept pure, or growing in different localities affects the original character of the potato.

Potatoes being of such extensive utility, various expedients

have been contrived with a view to find out the best method of preparing the seed. In many parts of England (where Potatoes equal to any in the world are raised), the farmers seldom plant them whole; they take the Potatoes as they come to hand, and in cutting them, take care to have two good eyes in each set; the small Potatoes are deprived of the sprout or nose-end, as it is generally considered that a redundancy of eyes exhausts the set, and produces weak plants, which are not calculated to yield a full crop. I have frequently known from five to six hundred bushels raised from an acre with small Potatoes alone cut in this way. Some prefer planting the sets immediately after they are cut. The better way is to get them cut a week before the time of planting, and to lay them out on a barn or garret-floor to dry.

It will require from twelve to sixteen bushels of Potatoes to plant an acre of ground, according to the size and nature of the seed-roots, the manner of preparing, and mode of planting the same.

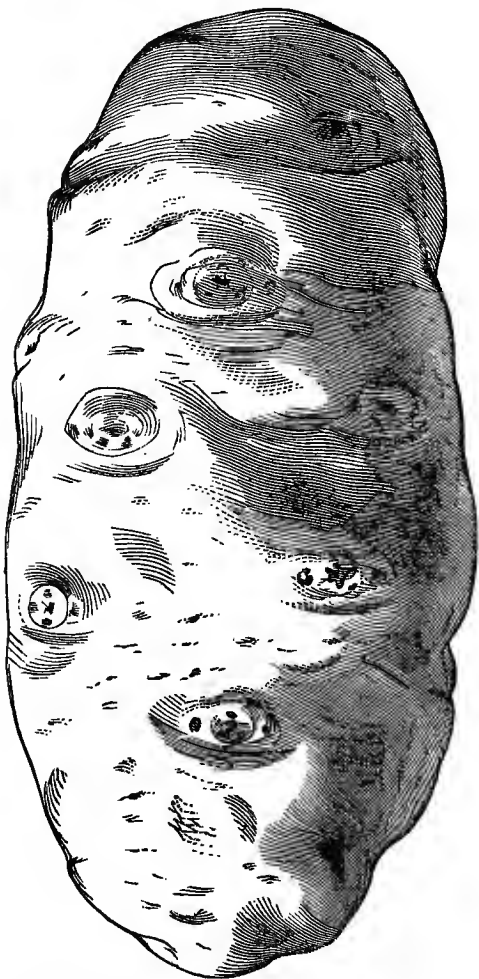
Potatoes may be planted from the first week in April until July, either in hills or drills; the best way for a gardener is to plant them in drills four or five inches deep, and about thirty inches asunder. The sets may be dropped six or eight inches apart; and if a small quantity of comb-maker's horn shavings, bone-dust, or sea-weed, be used as a manure for the early kinds, it will expedite their growth. The ground should be hoed as soon as the plants come up, and a few times after this. Level cultivation is better than hilling.

“HOW TO RAISE LARGE CROPS OF POTATOES.

“It is desirable, not only to get the best varieties for seed, but to know how to plant them and to raise the largest and best crop.

“The method I pursue, and which pays better, *far better*, than any of the old systems generally practised, is as follows:

"1. In the fall plough *deeply* and subsoil plough, in all eight-
een to twenty inches in depth.



"EARLY GOODRICH POTATO."

The illustration of a potato herewith given represents the "Early Goodrich," which is celebrated, with superior cultivation, for being very early, large, white skin, smooth eyes, white flesh, of first quality, perfectly sound, solid to the core, keeps well, and is highly productive. Average yield on good rich soil, 300 bushels per acre. This and the following illustrations of potatoes were prepared by Mr. A. W. Harrison, of Philadelphia, a distinguished potato amateur. We furnish a fair idea of his mode of raising potatoes.

"2. In early spring, plough and subsoil across the winter furrows; harrow and roll.

“3. Mark out, as for corn, three feet apart each way, opening the furrows eight inches deep.

“4. At the intersection drop a *whole* potato, *the largest you have*, and spread upon it a handful (about forty bushels per acre) of a compost made of eight parts of wood-ashes, four of bone phosphate of lime, four of fine-ground plaster, two of finely slaked lime, and one of salt; or, if preferred, three ounces of artificial fertilizer per hill. Then cover, roll, and spread 1,000 lbs. per acre of good artificial fertilizer.

“5. As soon as the young plants appear, run the cultivator close to and between, but *not over* them, in each direction. Afterwards, and *before* the weeds come up, cultivate, both ways, with Knox's horse-hoe—so arranged as to cut as shallow as possible, and keep the surface *entirely flat*. Repeat this, at short intervals, three times. Then hand-hoe three times, still keeping a flat surface. Allow no hilling at any time, nor any weeds to grow.

“6. As soon as the tops are dead, dig in clear dry weather with heavy five-tined digging forks; spread, under cover, to dry, and store in a cool, dark, dry, airy cellar, spreading half a pint of freshly-slaked lime in powder on each bushel of potatoes.

“7. Gather and compost the dry tops, for application next autumn; then plough and subsoil-plough as before, for next year's crop.

“The following are the advantages of this system of cultivation :

- “1. No possible entire failure of the crop.
- “2. No rot in healthy varieties.
- “3. The largest yield the soil and variety are capable of.
- “4. The largest proportion of large potatoes.
- “5. No degeneracy of varieties, but continued improvement.
- “6. No necessity for rotation of crops: the potato can be thus grown almost indefinitely on the same land, with, perhaps, at long intervals, a seeding to clover to maintain the supply of vegetable fibre in the soil.

"7. No loss by late spring frosts. If the early growth is cut off, the dormant eyes will grow and the crop be saved.

"8. The greatest economy of culture and harvesting.

"9. The highest table quality of potato.

"If the materials for the compost cannot be obtained, top-dress heavily in the fall, after ploughing, with barn-manure, but never use it in the season of planting. It may increase the crop, but tends to engender disease, especially in wet seasons.

"Any further information on the subject will be cheerfully furnished on application.

"If you wish liberal crops you must give liberal culture."

FORCING POTATOES IN HOTBEDS.

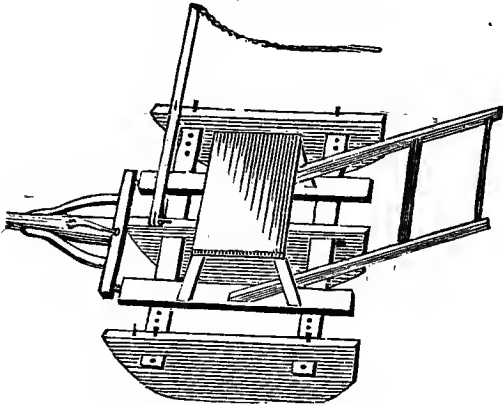
Potatoes may be forced in a great variety of ways. Those who attempt to mature Potatoes in frames, will of course provide such of the earliest kinds as are not inclined to produce large tops. Potatoes may be forwarded in growth previous to being planted in the beds, by placing them in a warm, damp cellar. Some forward them in pots and boxes, and afterwards mature them in a hotbed; others plant them in the bed at once, in which case the bed should be moulded from fifteen to twenty inches deep, and the heating materials should be sufficient to keep up a moderate heat for several weeks.

Perhaps the most convenient way to force Potatoes in this climate, is to provide pots for the purpose, and plant one set in each pot, and place them in a warm cellar till a bed can be prepared. While the tuberous roots are forming, and before they fill the pots, prepare the beds for maturing them, and then bury them in the mould with the balls of earth attached to them.

The beds should be kept free from frost, and air should be given at every opportunity. The common round Potatoes may be forwarded, by laying them thick together in a slight hotbed in March, and when they are planted in the borders, a quantity of comb-maker's shavings may be deposited in each hill; this will greatly promote their growth.

POTATO-GROUND MARKER.

The accompanying illustration represents a gauge-marker, for marking out either potato ground or corn ground. It is drawn by two horses, and makes three marks at one through. The

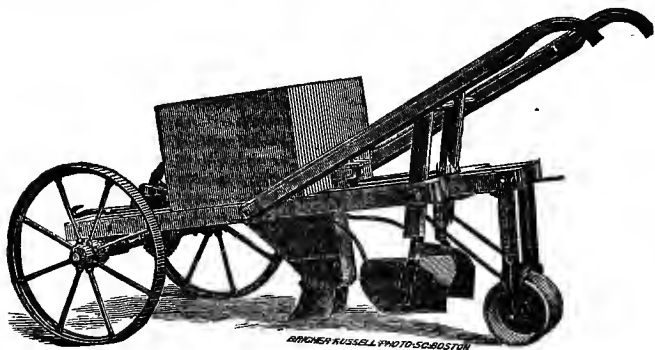


three runners are each about four feet long, eight inches wide, and two inches thick. The two outside runners can be moved towards or away from the middle runner, and secured to the slats that extend through all the runners. The slats are four inches wide, of hard wood, and one inch thick. A wooden pin secures them rigidly in the middle runner, and iron pins in the outside runners. A tongue belonging to some light carriage can be used with such a marker. The braces of the tongue are secured to raves bolted to the slats, as shown by the figure. It can be constructed with a seat, or not. On sod ground a seat will be necessary, as the weight should be increased in order to make a plain mark. The illustration will show how the handles are to be attached. The gauge-marker has a small chain attached to the outer end, which should run

in the last mark made by the runner. When the marker is turned around, the gauge is laid over on the other side of the marker.

TRUE'S POTATO PLANTER.

The illustration herewith given represents a machine for making the furrow, cutting the potatoes, dropping the pieces,

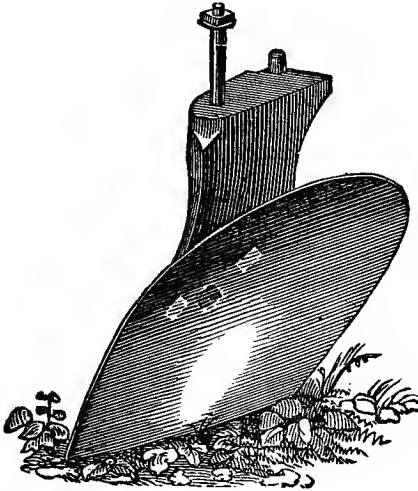


covering the seed, and rolling the ground, all at one operation, in a workmanlike manner. It was invented only a few years since, by J. L. True, Garland, Maine. We have seen it operated with one horse, where it planted potatoes with great dispatch and accuracy. Where a farmer plants several acres of potatoes, such a planter will relieve workmen of much hard labor.

A STEEL CULTIVATOR TOOTH.

The following illustration represents one of the best kinds of cultivator teeth that we have ever met with for cultivating potatoes. They are bolted to the wood-work of cultivators, with strong bolts passing through the iron flanges or palms on the upper end of the standard. The steel plates are bolted to the cast-iron standards. When the earth is to be turned towards the growing plants, the teeth are attached with

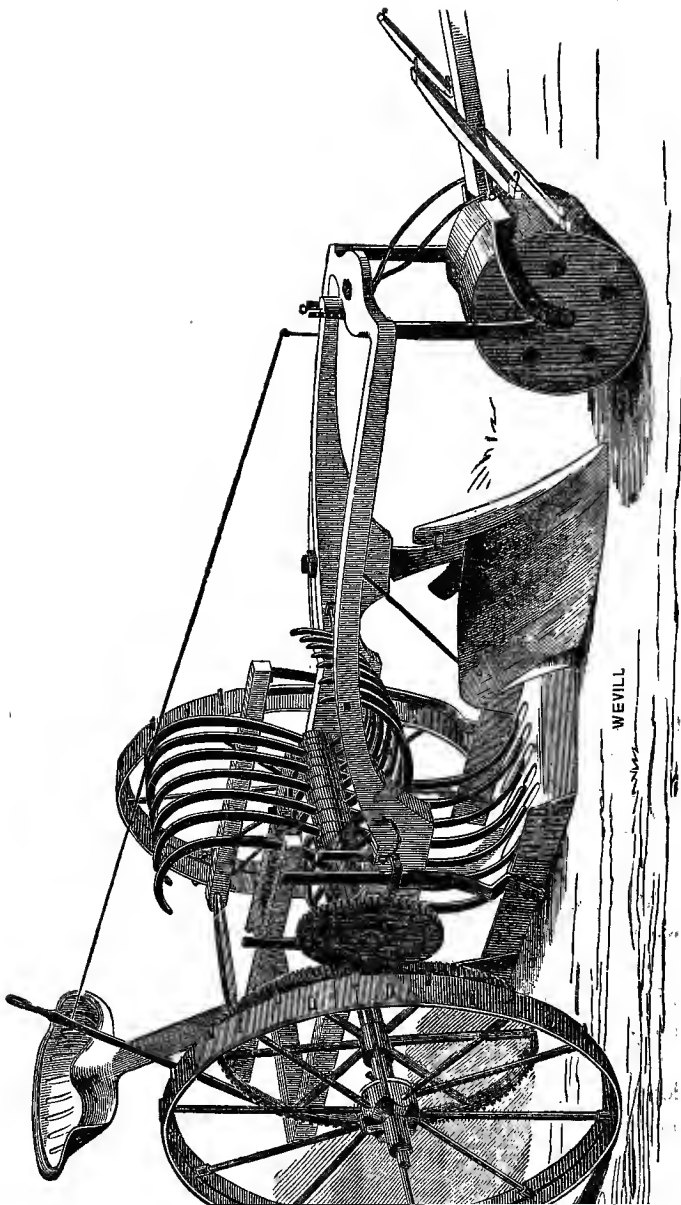
the steel plates or mould-boards outwards. If it is desirable to turn the earth inwards, or away from the plants, the teeth are taken off the cultivator and bolted to the opposite side. Such



teeth can be obtained of the inventor, M. Alden & Son, Auburn, N. Y., or of Paschall Morris's Agricultural Works, 1120 Market street, Philadelphia, Pa.

HILL'S POTATO-DIGGER.

The illustration on the next page represents a two-horse potato-digger, recently invented by Rev. J. J. Hill, Xenia, Ohio. We saw the first one that was ever made, in operation on Long Island, in the fall of 1865. It works well, and has been thoroughly perfected by the proprietor, R. H. Allen, 189 Water street, New York City. Those farmers who raise large quantities of potatoes will find this a great labor-saving implement.

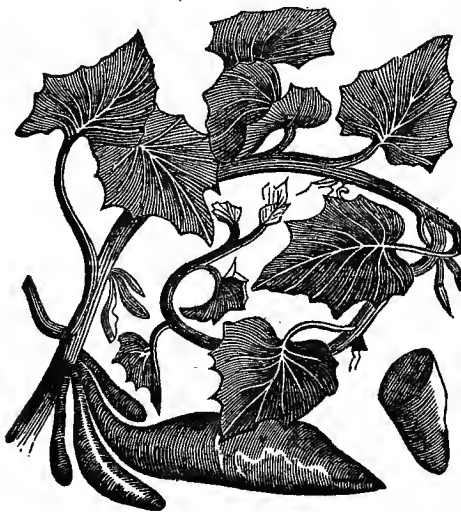


WEVILL

SWEET POTATOES.

POMME DU TERRE DOUCE. *Convolvulus batatas.*

Sweet Potatoes are grown to great perfection in the Southern States, and may be raised in the vicinity of New York, by means of a moderate hotbed, in which they should be planted whole early in April, three or four inches deep, and about the



same distance apart. In about a month they will throw up sprouts. When these are three inches above ground, part them off from the Potato, which, if suffered to remain, will produce more sprouts for a successive planting. Transplant the sprouts into rich light soil, in rows four feet apart, and the plants about a foot apart in the rows, or in hills four feet apart. Keep them clear of weeds until the vines begin to cover the ground; after which they will grow freely. In sandy ground it is well to put a shovelful of rotten manure to each plant. A moderate hotbed five feet square, put down early in the month

of April, with half a peck of good sound Sweet Potatoes placed therein, will produce a succession of sprouts in May and June, which, if planted and managed as directed, will yield about fifteen bushels of good roots.

PUMPKIN.

CITROUILLE OU POTIRON. *Cucurbita pepo.*

This plant is highly deserving of cultivation, particularly in new settlements. The large sorts are profitable for cattle, as some of the mammoth tribe have been known to weigh upwards of two hundred pounds each. The other kinds are very productive, and may be raised on any waste land. They are generally raised on cultivated farms, between hills of Indian-corn, and may be planted in the garden or open field in May and June, in hills eight or ten feet apart, with three or four seeds in each hill.

One quart of Field Pumpkin-seed will plant from five to six hundred hills. An ounce of the finer kinds will plant from fifty to eighty hills. The finest quality of Pumpkins are known to make good pies, and may also, after being boiled, be worked up with wheaten flour into bread, for which purpose they are fully equal to Indian-meal. The knowledge of this fact may prove advantageous to farmers living at a distance from cities, as they may find a market for their grain or meal readier than for their Pumpkins.

There is a vast difference in the quality of Pumpkins. Some are very coarse-grained, spongy, very watery when cooked, and make exceedingly poor pies; while others are rich, fine-grained, cook dry and mealy, and require but little or no sweetening. Pumpkins of a mammoth size are seldom as good as small ones.

The way to raise good Pumpkins is, to procure and plant none

but the best seed. Never plant seed that has been taken from Pumpkins of poor kind. Pumpkins will hybridize, even when they grow several rods apart. Hybrids are always poor. The seed is unfit to plant, as they will not produce excellent Pumpkins. Those seeds sold in markets are seldom reliable. When an excellent Pumpkin is found, dry the seeds with care, and plant a few hills in one corner of a large field, far away from other vines, and continue to save the seeds of the best specimens which the vines produce for several years. After a few seasons, an excellent variety will be obtained; and if the seeds be planted on rich ground, not among growing crops, very large crops may be grown with little labor. When Pumpkins are raised among Indian-corn, it is impossible for them to grow as large and fair as if the vines were not shaded. Moreover, the crop of corn will not be as large, when the soil produces a heavy crop of Pumpkins.

One of the best ways of raising a crop of Pumpkins is, to stick the seed one in a place, eight feet apart in every fourth row of Potatoes, soon after the rows appear. The crop of Potatoes will come to maturity before the Pumpkin-vines have become so large as to shade a large proportion of the ground.

RADISH. RADIS OU RAVE. *Raphanus sativus*.

The different varieties of Radish are extensively cultivated near large cities, chiefly for their roots, which are considered a luxury after a hard winter, and prove acceptable as warm weather approaches, provided they can be obtained in perfection. The plant is also cultivated for the sake of the seed-leaves, which are used as a small salad; and even the seed-pods, if pickled while young and green, are considered by some a good substitute for Capers.

Those who may be desirous of having good Radishes early in the spring, should have a warm border prepared in the very best manner, so as to be ready to sow some of the seed as early in the spring as the seed will vegetate. If the ground

should not be in good condition to receive the seed at this time, let it be delayed a few days; and by the first of April have another bed prepared in the open ground, by working in some strong well rotted manure. The seed may be sown broadcast, and raked in evenly, or in drills drawn about one inch deep, and a foot apart.

If you wish to have Radishes in regular succession, sow seed of the most esteemed varieties every two weeks, until the middle of June. If any be sown after this, it should be the seed of those that will endure the heat better than the others, and may be sown in drills, in small quantities, throughout the summer until the latter part of August, when all the varieties may be sown in regular succession till the first of October.

Radishes must have a sandy or loamy soil. It is folly to attempt to raise them on heavy soils, even when such ground is extremely rich. For family use, a load or two of sand may be mingled with a small area of ground in a warm corner of the garden, and made fertile with rich liquid manure a few weeks or more before the seed is planted. A shield on the north side of the bed, made of boards nailed to stakes four or more feet high driven in the ground temporarily, will break off the cold wind, reflect the warm sunshine on the bed, and make the Radishes grow long before other plants appear. In order to have excellent Radishes, save and plant only the largest, earliest, and fairest seed.

It may be necessary here to remind the gardener of the necessity of sowing tobacco-dust, soot, ashes, etc., over his seed-beds, in hot, dry weather, or he will find it difficult to raise Radishes in unpropitious seasons.

FORWARDING RADISHES.

Radishes may be obtained early in the spring by means of a moderate hotbed. The earth in the frames should be a foot in depth, and air should be admitted every day after they are up, or they will incline more to tops than roots. If they come

up too thick, they should be thinned to one or two inches apart. Give gentle waterings as occasion requires, with tepid water, and keep them well covered in cold nights. For raising early Radishes without frames, hotbeds may be made in ridges, and arched over with hoop-bends, or pliant rods, which should be covered with mats or canvas cloth at night, and during the day in cold weather. In moderate days turn up the covering; and on fine mild days, take it wholly off, and harden the plants gradually to the weather.

In order to have tender Radishes, it is essential that they be made to grow rapidly. When they grow slowly, and the weather is cold, Radishes are tough and stringy.

ROCAMBOLE.

AIL D'ESPAGNE. *Allium scorodoprassum*.

This and the *Allium sativum*, or common Garlic, are raised in some gardens. Many people consider the Rocambole to be of a milder and better flavor than Garlic, but the bulbs are not so large. The plants are hardy, and will grow in almost any rich soil or situation. They may be propagated either by the roots or seed. The former ought to be separated and planted at the same time, and in the same manner as Shallots. If raised from seed, they may be sown in drills, either shortly after the seed is ripe, or in the succeeding spring. The plants require to be kept clear of weeds; and in the following autumn may be taken up, the bulbs parted, and planted as before.

RHUBARB.

RHUBARBE. *Rheum*.

Rhubarb is a genus of exotic plants, comprising seven species, of which the following are the principal:

1. *Rhaponticum*, or Common Rhubarb, a native of Thrace and Syria, has long been cultivated in British gardens for the footstalks of the leaves, which are frequently used in pies and tarts.

2. *Rheum undulatum* is also cultivated for the same use.

3. The *Palmatum*, or true Officinal Rhubarb, is a native of China and the East Indies, whence its culture has been introduced into Europe. It produces a thick, fleshy root, externally yellowish brown, but internally of a bright color, streaked with red veins. The several kinds of Rhubarb may be propagated by offsets taken from the roots early in the spring, or from seed sown early in autumn, or in March and April, in drills one inch deep and a foot apart. The indispensable points to the production of good roots of the *Palmatum*, are depth and richness of soil, which should be well pulverized before the plants are set out. Prepare beds of fine mould eighteen inches deep, in which set the plants from the seed-bed, ten or twelve inches apart. This must be done when they have attained the height of four or five inches, and have thrown out as many leaves.

The first season is the most critical, and more care is necessary. If the weather be hot, the nursery must be shaded, and at all events frequently watered; for water, though hurtful to old plants, is now of the first importance. Wet weather is the most proper time in which to plant. The beds must be kept free from weeds during the summer, and on the approach of severe weather, covered up with light litter. In the early part of spring, this must be taken off; and in the beginning of April the plants must be transplanted into rich ground.

Those who cultivate the *Palmatum* for the sake of the roots, should dig the ground two or three spades deep, and place the plants three feet apart every way. As to the other varieties, it is not so particular, only the plants must have room in which to grow. In the early part of November, the leaves being then decayed, the beds should be covered with dry litter. Before this is done, a little earth should be drawn round the

crowns of the plants. If there be any danger of water lodging, make trenches to carry it off. The beds should be stripped of their covering, and the ground well hoed and cleared of weeds. The roots of the *Palmatum* must not be taken up until six or seven years old. The stalks of the other kind may be cut every spring, as soon as the leaves are expanded.

If Rhubarb stalks be required for use early in spring, they may be obtained by placing flour barrels or deep tubs over some of the plants, and covering them up with fresh stable-dung, or by any of the methods pointed out in the article under the head of Forcing Vegetables. The stalks of this plant are used for pies and tarts. After being stripped of the skin, or outer covering, and divested of the small fibres, or stringiness to which the plant is liable in an advanced stage of growth, the stalk should be cut transversely into very small pieces, and then parboiled with sugar, and such spices as best suit the palate. Rhubarb may be kept in this way as well as other preserves, and may be used not only in pies and tarts, but will make an excellent pudding, which is done by flattening a suety crust with a rolling-pin, then spreading on the fruit, rolling it up in an oval shape, and boiling it in a cloth. Prepared in this way, the fruit retains its virtues, and the pudding may be served up hot, in slices from half an inch to an inch thick, with butter and sugar spread between the layers. Some boil the stalks to a juice, which being strained through a colander, will keep for years if well spiced and seasoned with sugar.

After the roots have been well washed, and the small fibres cut off, they are to be cut transversely into pieces about two inches thick, and dried on boards, turning them several times a day, in order to prevent the escape of the yellow juice, on which its medicinal qualities depend. In four or five days the pieces may be strung upon strings, and suspended in a shady but airy and dry situation, and in two months afterwards will be fit to dry.

FORWARDING RHUBARB.

Those who may desire to have this excellent substitute for fruit at an early season, may procure it without much trouble. It is customary with some persons in the southern parts of England to keep this plant growing in their kitchens, so that they may have it for use at any time. They have strong neat boxes, made for the purpose, about three feet deep and two wide, and in length, according to the demand, from four to eight feet; these being kept clean, have the appearance of flour-bins, and they sometimes are so contrived as to have shelves over them in imitation of a kitchen dresser. The plants being taken up out of the garden towards winter, are placed as close to the bottom of the box as they can be, with their crowns level; and some sand being thrown over, sufficient to fill up the interstices, and to cover the crowns about half an inch, finishes the operation. No further trouble is necessary, except to give a little water, just to keep the roots moist, as they need no light at all; and if the roots be planted in the garden when the spring opens, they will, after having taken root, vegetate as strongly as before they were removed.

Roots of Rhubarb, taken up in autumn and packed in sand, and deposited in a warm cellar, will produce stalks earlier than if kept in the garden; and if placed in hotbeds they will yield abundantly early in the season.

This plant contains an acid as fine as the Gooseberry, for pies and tarts. A square rod of ground will supply a family; and it may be used till midsummer or later.

SALSIFY.

SALSIFIS OU CERCIFIS. *Tragopogon porrifolius*.

This plant grows spontaneously in the open fields of England, and is by some highly valued for its white edible root, and for the young shoots rising in the spring from plants a

year old. These, when gathered while green and tender, are good to boil and eat in the same manner as Asparagus. Some have carried their fondness for this plant so far as to call it Vegetable Oyster. It requires the same kind of soil and management as Carrots and Parsnips.

The seed should be sown early in the spring, an inch deep, in drills twelve inches apart. When the plants are two or three inches high, they should be thinned to the distance of six inches from each other, and afterwards hoed. The ground should be kept clean and loose around the plants by repeated hoeing. In the autumn they will be fit for use. The roots may be taken up late in autumn, and secured in moist sand from the air; or suffered to remain out, and dug up when wanted. As the seeds of Salsify do not all ripen uniformly, it should be sown moderately thick, and none but the earliest sowed.

The mode of cooking recommended by an American author is, "To cut the roots transversely into thin pieces; boil them in water, or milk and water; when boiled soft, mash them, and thicken the whole with flour to some degree of stiffness; then fry them in the fat of salt pork or butter." To some they are a luxury. In England the tops are considered excellent food when boiled tender, and served up with poached eggs and melted butter. They are by some considered salutary for persons inclined to consumption.

SCORZONERA.

SCORSONERE. *Scorzonera Hispanica.*

This plant has long been raised in British gardens, for culinary purposes, and especially as an ingredient in soups, on account of its palatable and nourishing roots. Some boil and eat them like Carrots, in which case they should be deprived of their rind, and immersed in cold water for half an hour, or they will be bitter. They are raised precisely in the same

manner as Salsify. If the seed be sown early in the spring in a good deep soil, the roots will attain perfection in autumn, and continue good all the winter. They last from three to four years, according to the quality of the earth and the care bestowed upon them; but it is better to raise a few from seed every year.

SEA-KALE.

CHOU MARIN. *Crambe maritima*.

This plant is found on the sea-shore, in the southern parts of England, where it grows spontaneously. As soon as it appears above ground, the inhabitants remove the pebbles or sand with which it is usually covered, to the depth of several inches, and cut off the young and tender leaves and stalks, as yet unexpanded and in a blanched state, close to the crown of the root. It is then in its greatest perfection. When the leaves are full-grown, they become hard and bitter, and the plant is not eatable. Cultivators have differed widely respecting the mode of treating this plant; many, conceiving that stones, gravel, and sea-sand are essential to its growth, have gone to the expense of providing them; but it has been discovered that it will grow much more luxuriantly in a rich sandy loam, where the roots can penetrate to a great depth.

The seed of Sea-Kale may be sown in October, or as early in the spring as the ground can be brought into good condition, in drills an inch and a half deep, and fourteen or sixteen inches asunder. The plants should afterwards be thinned out to the distance of six or eight inches from each other in the rows, and kept clear of weeds by frequent hoeing through the summer. When the plants are a year old, every third row may be taken up, and also every other plant in each row, leaving them fourteen or sixteen inches apart; these may be transplanted into good ground prepared as directed for Asparagus. Plant two

rows in each bed, about eighteen inches apart. The best way is to make two drills three inches deep, and with a dibble set in the plants fifteen or sixteen inches from each other; when these drills are filled, the crowns of the plants will be covered nearly two inches, but they will soon push through the earth. The plants left in the seed-bed may form a permanent bed, which should be forked or dug between the rows. Previous to this being done, lay on an inch or two of good rotten manure, and incorporate it with the earth around the plants. Some make new plantations of the old roots, which should be cut up into pieces of about two inches in length, and planted three or four inches deep, at the distance before directed for the plants. At the approach of winter, the leaves will die away and disappear. The beds should then be thickly covered with dung, leaves, or sea-weed. This will not only protect the plants from frost, but will cause them to shoot up early in the spring. As soon as the frost is out of the ground, this may be taken off; or, if well rooted, it may be mixed up with the earth. The crowns of the plants should then be covered to the depth of ten or twelve inches for blanching.

Some blanch it by heaping on it sea-sand; some common sand and gravel; and others with large garden-pots, inverted and placed immediately over the plants. If these pots be covered up with fresh horse-dung, it will forward the shoots in growth, and make them sweeter and more tender. When the plants have been covered in either method three or four weeks, examine them, and if you find that the stalks have shot up three or four inches you may begin cutting. Should you wait till all the shoots are of considerable length, your crop will come in too much at once, for in this plant there is not that successive growth which there is in Asparagus. You may continue cutting until you see the heads of flowers begin to form; and if at this time you uncover it entirely, and let it grow to that state in which Broccoli is usually cut, and use it as such, you will find it an excellent substitute; and this greatly enhances the value of the plant. Sea-Kale is sufficiently hardy

to bear our winter frosts without much injury. Care should be exercised not to weaken the roots too much by over-cutting, for in that case it would injure their next year's bearing. Some of the shoots should be allowed to grow, to carry on a proper vegetation, and strengthen and enlarge the roots. Great care should be taken in cutting, not to injure the crowns of the roots by cutting the shoots too close to them. Sea-Kale should be dressed soon after it is cut, as the goodness of the article greatly depends on its not being long exposed to the air.

If you choose to force Sea-Kale, dig a trench all around a small bed, about three feet wide, and thirty inches deep; fill it with hot dung, and as it sinks, fill the depression with good soil. This will make the plants grow luxuriantly. To have this rare vegetable in perfection, it should be cooked as soon as gathered. Let it be first soaked in water, seasoned with salt, for half an hour; then wash it in fresh water, and put it into the cooking utensils; keep it boiling briskly, skim clean, and let off steam. When the stalks are tender, which may be expected in from fifteen to twenty-five minutes, according to size and age, take it up, dish it, and serve it up with melted butter, gravy, and such condiments as are most agreeable to the palate.

SKIRRET.

CHERVIS, OU GYROLE. *Sium sisarum.*

This plant is first propagated by seed, and afterwards by offsets taken from the old roots, planted early in the spring, before they begin to shoot. But it is best to raise a small bed from seed every year, as the roots grow longer than those raised from slips, and are less liable to be sticky. The seeds may be sown in drills the latter part of March, or early in April, and managed the same as Salsify or Parsnip. In autumn, when the

leaves begin to decay, the roots are fit to use. Skirrets should be planted in a light, moist soil; for in dry land the roots are generally small, unless the season proves wet.

The root of the Skirret is composed of several fleshy tubers as large as a man's finger, and joined together at the top. They are eaten boiled, and stewed with butter, pepper, and salt, or rolled in flour and fried, or else cold, with oil and vinegar, being first boiled. They have much of the taste and flavor of a Parsnip, and are by some considered more palatable.

SHALLOT.

ECHALOT. *Allium ascalonicum.*

The true Shallot is a native of Palestine, and possesses an agreeable flavor; it is propagated by planting bulbs, or offsets, in the fall of the year, which may be set out with a dibble, in rows twelve inches apart, and from four to six inches distant in the rows; or they may be placed in drills, two or three inches deep, and covered up.

Those intended for seed may remain in the ground until June or July; after the tops have decayed the bulbs must be taken up, and the offsets divided; these should be kept in a dry place to plant the ensuing autumn.

SPINACH, OR SPINAGE.

EPINARD. *Spinacia.*

The *Spinacia oleracea*, or common Spinach, is very hardy, and consequently a very important vegetable for cold climates. It merits attention from its being extremely wholesome and palatable, and from its keeping green even after having been cooked. It makes a delicious dish when served up with the gravy of roast meat, melted butter, etc.

As Spinach is the only vegetable which can be raised to advantage near the close of the growing season, the gardener should prepare such grounds as may have been occupied by summer crops ; and by having it well manured for this crop, the soil will be in good condition for Beets, Carrots, Parsnips, Turnips, etc., the spring following. If the ground be prepared so as to have several beds sown in succession, from the first to the end of September, the most forward of these, if covered up with straw at the approach of cold weather, will furnish greens for the table when other vegetables are scarce, and the later crops will recover from the effects of a hard winter, and produce a wholesome vegetable early in the spring.

If Spinach-seed be sown in rich ground in March and April, it will grow freely ; but it must be cut before the approach of hot weather, or it will run to seed. To raise it in perfection at this season, it should be sown in drills about a foot apart, and be frequently hoed. This will keep it in a growing state, and consequently prevent its running up to seed as quick as it otherwise would.

It is altogether useless to sow Spinach-seed in poor ground. Let the ground be well manured, and the crop will be abundant. Be careful to pick Spinach exceeding clean, and wash it in five or six waters previous to cooking. Some cook Spinach in a steamer over boiling water. Others boil it in water. But the best way is to put it into a saucepan that will just hold it, without water, then strew a little salt upon it, and cover it close. Put the saucepan on a clear quick fire ; and when you find the Spinach shrunk and fallen to the bottom, and the juice which comes from it boil up, it is done. In order that it may be rendered capable of absorbing a moderate quantity of gravy, melted butter, etc., which are indispensable with green vegetables, let it be well drained in a sieve, or colander, before it is dished.

SQUASH.

GOURDE GIRAUMON OU POTIRON. *Cucurbita melopepa.*

The several varieties of Squash are very useful in this and other warm climates, as they can be grown in perfection in the summer, and therefore prove a good substitute for Turnips. The seed should be planted in May and June, in hills, prepared in the same manner as for Cucumbers and Melons; and their subsequent management is the same in every respect. The bush kinds should be planted three or four feet apart, and the running kinds from six to nine, according to their nature, as some will run more than others. It is always best to plant five or six seeds in a hill, to guard against accidents; as when the plants are beyond danger they can be thinned to two or three in a hill.

The fruit of the Early Summer Squash is generally gathered for use before the skin becomes hard, and while it is so tender as to yield to the pressure of the thumb-nail. The winter Squashes should be allowed to ripen, and collected together in October, before they are injured by hard frosts.

All kinds of Squashes should, after having been boiled tender, be pressed as close as possible between two wooden trenchers, or by means of a slice or skimmer, made of the same material, until dry, and then prepared for the table in the same manner as Turnips.

In order to raise excellent Squashes, good seed is essential, and rich ground and clean cultivation are indispensably necessary. The seeds should be selected from a ripe and good Squash, and not from a hybrid. Manure may be applied in the hill. If the soil be heavy, let a few shovelfuls of sand be mingled with the soil, where each hill is to grow. When the vines grow rampantly, pinch off the ends of each as soon as they have grown as far from the hill as it is desirable for them to spread. There is nothing gained, but much lost, by allowing the main vines and branches also to attain a great length.

Pull off all the Squashes but two or three on each vine. One good squash is better than three or four of an inferior quality and size.

HOW TO EXTERMINATE THE GRUB.

Many times, when the vines are a few feet long, and young Squashes have appeared, grubs may be found in the middle of the vines, near the root. Sometimes I have found six white grubs, more than an inch long; in a single vine. They bore into the vines an inch or two above the surface of the ground; and the holes may be discovered readily, as foam and fecal matter are constantly being worked out by the worms.

In order to dislodge the grubs, thrust a thin blade of a sharp knife through the vine, and split it open so that the grubs can be discovered and killed. This is the only effectual way to raise Squashes when the grub attacks the vines. Laying the vine open will not injure it.

TOMATO.

TOMATE, OU POMME D'AMOUR. *Solanum lycopersicum.*

The Tomato, or *Love-Apple*, is much cultivated for its fruit, which is used in soups and sauces, to which it imparts an agreeable acid flavor. It is also stewed and dressed in various ways, and is considered very wholesome. The seed should be sown early in the spring, in a hotbed, and the plants set out in the open ground, as soon as the ground has become warm. In private gardens, it will be necessary to plant them near a fence, or to provide trellises. They may be planted four feet distant from each other every way. Tomatoes may be brought to perfection late in the summer, by sowing the seed in the open ground the first week in May. These plants will be fit to transplant early in June, and the fruit may ripen in time for preserves or catsup.

MANNER OF PRESERVING TOMATOES.

Tomatoes may be preserved in a stone or glazed earthen pot, for use in the winter, by covering them with water in which a sufficient quantity of salt has been dissolved to make it strong enough to bear an egg. Select perfectly ripe berries, and cover the pot with a plate in such a manner that it will press upon the fruit without bruising it. Previous to cooking these Tomatoes, they should be soaked in fresh water for several hours. Besides the various modes of preparing this delicious vegetable for the table, it may be preserved in sugar, and used either as a dessert or on the tea-table, as a substitute for peaches or other sweetmeats. It also makes good pies and tarts, and excellent catsup.

A celebrated writer observes, that "the common Tomato made into a gravy, by stewing over the fire, and used as a sauce for meat, has been known to quicken the action of the liver and of the bowels better than any medicine he ever made use of; and when afflicted with inaction of the bowels, headache, a bad taste of the mouth, straitness of the chest, and a dull painful heaviness of the region of the liver, the whole of these symptoms are removed by Tomato sauce, and the mind, in the course of some few hours, is put in perfect tune."

HOW TO MAKE CATSUP.

To make catsup, use one pint of salt to one peck of Tomatoes. Bruise, and let them stand two days; then strain them dry, and boil the juice, until the scum ceases to rise, with two ounces of black pepper, the same quantity of pimento or allspice, one ounce of ginger, one of cloves, and half an ounce of mace. Tomatoes are excellent raw, cooked with toasted bread, or eaten in any other way. "When I see a dish of luscious peaches and delicious tomatoes side by side, I am in doubt as to which I really like the best, when eaten raw.

TURNIPS. NAVET. *Brassica rapa.*

The turnip is a wholesome and useful plant, for both man and beast, and eminently worthy of cultivation.

“Until the beginning of the eighteenth century, this valuable root was cultivated only in gardens, or other small spots, for culinary purposes; but Lord Townsend, who attended King George the First in one of his excursions to Germany, in the quality of Secretary of State, observing this root cultivated in open and extensive fields, as fodder for cattle, and spreading fertility over lands naturally barren, on his return to England brought over some of the seed, and strongly recommended the practice which he had witnessed to the adoption of his own tenants, who occupied a soil similar to that of Hanover. The experiment succeeded; the cultivation of Field Turnips gradually spread over the whole county of Norfolk, and has made its way into every other district of England. Some of the finest grain crops in the world are now growing upon land which, before the introduction of the Turnip husbandry, produced a very scanty supply of grass for a few lean and half-starved rabbits.”

Mr. Colquhoun, in his “*Statistical Researches*,” estimated the value of the Turnip crop annually growing in the United Kingdom of Great Britain and Ireland, at fourteen million pounds sterling (equal to upwards of SIXTY MILLIONS OF DOLLARS). But when we further recollect, that it enables the agriculturists to reclaim and cultivate land which, without its aid, would remain in a hopeless state of natural barrenness; that it leaves the land clean and in fine condition, and also insures a good crop of Barley, or of Clover; and that this Clover is found a most excellent preparative for Wheat, it will appear that the subsequent advantages derived from a crop of Turnips must infinitely exceed its estimated value as fodder for cattle.

The preceding remarks show the kind of land that may be made capable of producing not only Turnips, but other things of equal value. It must, however, be granted, that

some soils naturally suit particular kinds of vegetables better than others; yet, as we have not always a choice, if the soil is light and altogether not suitable for vegetables in general, two crops of Turnips may be grown in one year by sowing seed for the first crop early in the spring, and for the second about the first of August. For general crops, it will be better to have ground manured with short, rotten dung, or compost containing a considerable portion of coal, wood, peat, or soapers' ashes. Most ground that has been well manured for preceding crops, and recently broken up, will do well for Turnips, when there is not an excess of clay and water. If the seed for the first crop be not sown soon enough to mature early in July, the roots are seldom fit for the table, being stringy and wormy; and if the seed intended for a crop for autumn and winter use is sown before August, unless it be a very favorable season, even if they escape the attack of insects and reptiles, the turnips often are defective and unpalatable.

To have turnips in perfection, they must be hoed and thinned out as soon as the leaves are as large as a cent, leaving the best plants from six to nine inches apart. The roots will be better, and the crops greater, if thinned out properly, than if the plants are allowed to grow so closely together that the leaves override and the roots crowd each other.

It is generally admitted that one pound of Turnip-seed is amply sufficient for an acre of ground, yet it is better to use considerably more, because of the difficulty of distributing so small a quantity of seed regularly broadcast. This difficulty is, however, obviated by sowing the seed in drills; and although drilling-in the seed may seem a tedious process to those who have no other means of doing it than by hand, the facilities thus afforded of hoeing between the rows, more than compensate for the extra labor.

I once induced a friend of mine to sow four ounces of Turnip-seed in August, in drills a foot apart, by which means he made it extend over more than half an acre of land; and by hoeing the plants twice, he had the gratification of pulling four

hundred bushels of handsome Turnips, which is more than is generally taken from an acre of land cultivated in the ordinary way.

If seed of the Russia or Swedish Turnip be sown in drills, any time in the month of July, or even early in August, they will produce fine roots towards the end of October, provided the land be rich and sandy, or a light loam and the cultivation be thorough. This kind of turnip must be hoed and thinned to the distance of twelve or fifteen inches from each other. If cultivated in the field, frequent cultivation between the rows will be beneficial, and cause the plants to grow luxuriantly.

With many persons the Turnip is a favorite vegetable. In England, a leg of mutton and caper sauce is considered, by epicures, as but half a dish without mashed Turnips. To cook them uniformly, they should be cut in pieces of equal size, after they are pulled, and after being boiled tender, let them be taken up and pressed as dry as possible; at the same time, let a lump of butter and a due proportion of Cayenne-pepper and salt be added, and beaten up with the Turnips until properly mixed. Use the natural gravy from the meat unadulterated, and such condiment as may be most esteemed.

REPELLING THE TURNIP-FLY.

Previous to sowing Turnip-seed, the gardener should procure a suitable quantity of lime, soot, or tobacco-dust, so as to be prepared for the attacks of insects. Turnip-seed will sometimes sprout within forty-eight hours after it is sown; and frequently whole crops are devoured before a plant is seen above ground. A peck of either of these ingredients, mixed with about an equal quantity of ashes, or even dry road-dust, scattered over the ground, morning and evening, for the first week after sowing the seed, will be sufficient for an acre of ground, provided the composition be used in such a way that the wind will carry it over the whole plot. But as the wind often changes, this end may be effected by crossing the land in

a different direction each time, according as the wind may serve. If gardeners who raise Radishes, Cabbage, and such other vegetables as are subject to the attacks of insects, were to pursue this course, they would save themselves from considerable loss.

When ashes and other dust is being scattered over Turnips, the work should be done by a careful laborer, who will not walk on the rows of young Turnips, and thus destroy hundreds of plants where they are already standing too far apart. When the seed is put in with a suitable seed-drill, the roller usually marks the place where the young plants may be found.

We have always found that unleached wood-ashes, sifted thinly over the drills soon after the seed was put in, would repel the Turnip-fly most effectually. As the fly is ready for the young plants as soon as the first tender leaves appear, ashes must be sowed before the Turnips have come up, or the crop may be lost. A thin sprinkling is sufficient. If unleached ashes be applied too abundantly, the alkali will destroy the young plants as soon as sufficient moisture comes in contact with the ashes to dissolve it.

AROMATIC, POT, AND SWEET HERBS.

GRAINES D'HERBES AROMATIQUES, ODORIFERANTES, ET À L'USAGE
DE LA CUISINE.

Angelica, Garden,	<i>Angelica atropurpurea.</i>
Anise,	<i>Pimpinella anisum.</i>
Basil, Sweet,	<i>Ocimum basilicum.</i>
Borage,	<i>Borago officinalis.</i>
Burnet, Garden,	<i>Poterium sanguisorba.</i>
Caraway,	<i>Carum carui.</i>
Chervil, or Cicely the Sweet,	<i>Scandix odorata cerefolium.</i>
Clary,	<i>Salvia sclarea.</i>
Coriander,	<i>Coriandrum sativum.</i>
Dill,	<i>Anethum graveolens.</i>
*Fennel, Common,	<i>Anethum feniculum.</i>

*Fennel, Sweet,	<i>Anethum dulce.</i>
Marigold, Pot,	<i>Calendula officinalis.</i>
*Marjoram, Sweet,	<i>Origanum marjorana.</i>
*Mint, Spear,	<i>Mentha viridis.</i>
*Mint, Pepper,	<i>Mentha piperita.</i>
*Mint, Pennyroyal,	<i>Mentha pulegium.</i>
*Sage, Common,	<i>Salvia officinalis.</i>
*Sage, Red,	<i>Salvia clandestinoides.</i>
Savory, Summer,	<i>Satureja hortensis.</i>
*Savory, Winter,	<i>Satureja montana.</i>
*Tarragon,	<i>Artemisia dracunculus.</i>
*Thyme, Common,	<i>Thymus vulgaris.</i>
*Thyme, Lemon,	<i>Thymus serpyllum.</i>

Aromatic Herbs are such as impart a strong spicy odor and savory taste ; many of them are used as small potherbs, and for sauces, stuffings, and other uses in cooking. As only a small quantity of these are necessary in private gardens, a by-corner may be allotted for them, and such medicinal herbs as may be wanted in a family.

It may be necessary to explain, as we go along, that there are three principal descriptive names given to plants—namely, Annuals, Biennials, and Perennials. The Annuals being but of one season's duration, are raised every year from seed. The Biennials are raised from seed one year, continue till the second, then perfect their seed, and soon after die ; some of these should also be raised every year from seed. The Perennials may be raised from seed ; but when once raised, they will continue on the same roots many years. Those marked * are Perennials, and may be propagated by suckers, offsets, cuttings, or parting the roots. The seed of any of the different kinds may be sown early in spring, in drills about half an inch deep, and twelve inches apart, each kind by itself. The plants may afterwards be transplanted into separate beds ; or, if a drill for each kind be drawn two feet apart, the seed may be sown in them, and the plants afterwards thinned out to proper distances, according to the natural growth of the different kinds.

Some of the kinds alluded to in the List will spread verv

rapidly, and occupy the entire ground, if not kept within proper bounds. To prevent Caraway, Spearmint, Peppermint, or any other plant from spreading, sink boards edgewise eight inches in the ground, entirely around the plot where such plants stand. Then destroy every plant that appears outside of its proper limits. Save a small quantity of the earliest, largest, and fairest of the panicles for seed, and keep the seeds in small papers in open boxes in some out-building where they will be dry and away from mice. When kept in a store-room the vitality of the seed is frequently destroyed by being dried to death.

PLANTS CULTIVATED FOR MEDICINAL AND OTHER PURPOSES.

GRAINES DE PLANTES MEDICINALES.

Bene,	<i>Sesamum orientale.</i>
Boneset or Thoroughwort,	<i>Eupatorium perfoliatum.</i>
*Balm,	<i>Melissa officinalis.</i>
Bean, Castor Oil,	<i>Ricinus communis.</i>
Burdock,	<i>Arctium lappa.</i>
Catnip,	<i>Nepeta cataria.</i>
Celandine,	<i>Chelidonium majus.</i>
*Chamomile,	<i>Anthemis nobilis.</i>
*Comfrey,	<i>Symphytum officinale.</i>
*Elecampane,	<i>Inula helenium.</i>
Feverfew,	<i>Chrysanthemum parthenium.</i>
*Horehound,	<i>Marrubium vulgare.</i>
*Horsemint,	<i>Monarda punctata.</i>
*Hyssop,	<i>Hyssopus officinalis.</i>
*Lavender,	<i>Lavandula spica.</i>
Lovage,	<i>Ligusticum levisticum.</i>
*Mallow, Marsh,	<i>Althea officinalis.</i>
*Motherwort,	<i>Leonurus cardiaca.</i>
*Patience Dock,	<i>Rumex patientia.</i>
*Pinkroot, Carolina,	<i>Spigelia Marylandica.</i>
Poppy Opium (annual),	<i>Papaver somniferum.</i>

*Rosemary,	<i>Rosmarinus officinalis.</i>
*Rue, Garden,	<i>Ruta graveolens.</i>
Saffron, Bastard,	<i>Carthamus tinctorius.</i>
Skullcap, or Mad-Dog Plant,	<i>Scutellaria lateriflora.</i>
Snakeroot, Virginian,	<i>Aristolochia serpentaria.</i>
*Sorrel,	<i>Rumex acetosella.</i>
*Southernwood,	<i>Artemisia abrotanum.</i>
*Speedwell, Virginian,	<i>Veronica Virginica.</i>
*Spikenard,	<i>Aralia racemosa.</i>
*Tansy,	<i>Tanacetum vulgare.</i>
*Wormwood,	<i>Artemisia absinthium.</i>

Many of the foregoing plants are useful, and may be raised in a small plot of ground appropriated especially to their production. Some of the plants in this list are considered noxious weeds; and all the seed should be gathered and destroyed, except so much as it is desirable to save. It is by no means difficult to keep each kind of these plants on a small plot by itself, as stated on a previous page.

The best time to save plants for medicinal purposes is when they are in full bloom. Spread the stems and leaves on a shelf, or floor, until they are quite dry; then they may be wrapped in papers, or pulverized by rubbing between the hands until thoroughly pulverized, when the powder may be kept in tin or other boxes properly labelled.

FORCING VEGETABLES.

Before I proceed to show the method of forcing vegetables, it may be necessary for me to remind my readers, that in providing an artificial climate, they should consider the nature of the plants they intend to cultivate, and endeavor to supply them with that which is best calculated to nourish and support them. I have, in another part of this work, endeavored to show that heat, light, air, and moisture, are each essential to vegetation, and that these should be supplied in a judicious manner, according to circumstances.

In the midst of our Northern winters, which is the usual time

for forcing in England, we are subject to north-west winds, which produce extreme freezing. Now, as we have not yet discovered how to make an artificial air, it will not be safe for the gardener to raise a bottom heat under any kind of vegetable until such time as he can impart a tolerable share of salubrious air, as the heat without air will soon destroy the fruits of his labor.

I shall not attempt to treat of the cultivation of Pineapples, Grapes, Cherries, or other fruits grown in forcing-houses; nor would it be advisable with us to undertake to raise Cucumbers, Melons, etc., in frames throughout the severe winters of our Northern States; but it must be acknowledged that the extreme heat of our summers is as detrimental to the cultivation of some of the most valuable kinds of fruits and vegetables, as the coldness of our winters; and for these reasons, artificial aid is more necessary here in the winter and spring of the year than in England, where a supply of the different varieties of Artichokes, Broad Beans, Borecole, Broccoli, Cauliflower, Kale, Lettuce, Radishes, Rhubarb, Spinach, Turnips, and salads in general, is easily obtained, a great part of the year, from their kitchen-gardens; whereas, if we were to attempt to supply our markets with culinary vegetables at all times, in anything like the abundance that they have them there, we must, out of the ordinary seasons for gardening operations, turn our attention to the protecting and forwarding as well as the forcing system.

The frame being set over the pit, and properly fastened, the fresh dung should be spread regularly in the pit to the depth of twenty or twenty-four inches; if the dung be in a good heating condition, cover it six or eight inches deep with mould, then lay on the ashes, and protect the beds from the inclemency of the weather. In two or three days the rank steam will pass off; it will then be necessary to stir the mould before the seed be sown, to prevent the growth of young weeds that may be germinating; then sow the seed either in shallow drills or broadcast, as equally as possible, reserving a small quantity of the warm mould to be sown lightly over the seed. The beds

should afterwards be attended to, as directed for Broccoli and Cauliflower.

The depth of heating materials must be regulated by the season of the year at which the work is commenced, and also to the purposes for which the hotbeds are intended. Beds used for the purpose of raising half-hardy plants, or for procuring seedling-plants late in the spring, may be made in the manner recommended for the common hotbed; but if substantial heat is required to be kept up, the beds must be so contrived as to admit of linings as the heat decreases; and the dung should undergo a regular process of preparation, according to the use it is intended for. Compost heaps should also be provided, in order to furnish suitable mould to the different species of plants; for this purpose, all the old hotbed dung and mould, leaves, tan, turf, sand, and other light manures and decayed animal dung, should be collected together.

In some cases, when a slight hotbed is recommended for forwarding hardy plants, if it should happen that a seedling Cucumber-bed be at liberty, it may answer every purpose for Radishes, Lettuce, or other hardy plants; or such a bed may be spawned for Mushrooms, if required.

If the forcing be commenced before the coldest of the winter is past, great precaution must be used, lest the plants be injured by cold cutting winds, or destroyed by heat for want of air. To prevent the former accident, warm dung should be placed around the frames, and the sashes covered with mats and boards every night. If full air cannot be admitted in the daytime, the sashes must be slidden down to let off the steam; at the same time mats may be laid over the aperture, to prevent cold air entering to the plants.

If the bottom heat in a bed be too violent, which is sometimes the case, means must be used to decrease it. This is generally effected by making holes in the bed with a stake sharpened at the end, or with a crowbar; and filling the holes with water until the heat is sufficiently reduced. In lining hotbeds, if the heat is reduced in the body of the beds, holes

may be carefully made to admit heat from the fresh linings, so as to enliven the heat of the bed.

A thermometer should always be at hand at the time of forcing, to be used, when necessary, to regulate the heat in the beds; and the water that is used to plants cultivated in frames, should be warmed to the temperature of the air, or according to the heat required for the various kind of plants.

FORCING ASPARAGUS IN HOTBEDS.

As Asparagus is apt to grow weak and slender by extreme bottom heat, it is forced with greater success, and with less trouble, in flued pits in a hot-house, than in dung hotbeds, because the heat from tan is more regular; yet a suitable bed may be formed in a deep hotbed frame, made in the usual way. If dung alone, or a mixture of dung and leaves be used, it should be in a state past heating immoderately before it is made into a bed.

For the purpose of keeping up a regular heat, a lining of hot dung should be applied around the frame, and changed as occasion requires.

If there be a strong heat in a bed, slide down the sashes till it begins to decline. The temperature at night should never be under 50° , and it may rise to 65° without injury; when the buds begin to appear, as much air must be daily admitted as the weather will permit. In two or three days after the beds are planted, the heat will begin to rise, when the beds should have a moderate supply of water, applied from a watering-pot with the rose attached, and repeated every three or four days.

A frame of ordinary size, calculated for three sashes, will hold from three to five hundred plants, according to their age and size; and will, if properly managed, yield a dish every day for about three weeks. On the above estimate, if a constant succession of Asparagus be required, it will be necessary to plant a bed every eighteen or twenty days.

Rhubarb and Sea-Kale may be, and sometimes are, forced in

the same manner as Asparagus ; but the most general mode is to excite them where they stand in the open garden, by the application of warm dung, and a shield made of boards four feet high to protect the young plants from the cold winds.

I N D E X .



A.

	PAGE
Ashes—peat.....	14
Artichoke—.....	32
Winter management of.....	33
Jerusalem	75
Aromatic—pot and sweet herbs.....	139
Asparagus—.....	35
Winter dressing of beds.....	37
Spring dressing of beds.....	38
Forcing of in hotbeds	145

B.

Beans—.....	40
pole or running.....	43
Beets.....	44
Borecole or kale.....	46
Brussels sprouts.....	46
Broccoli	47
Blanching celery.....	63
Bugs—destroying of green.....	41

C.

Crops—rotation of.....	16
Cauliflower.....	50
Cabbage.....	53

	PAGE
Cabbage—evil of deep planting.....	55
how to keep.....	56
Colewort or collards.....	57
Cardoons.....	58
Carrots.....	59
Celery.....	62
blanching of.....	63
best way of storing.....	65
Corn salad or fetticus.....	66
Cress—water.....	66
Cucumber—.....	67
raising in hotbeds.....	67
Chives or cives.....	71
Cultivator—a steel tooth of.....	116
Catsup—how to make.....	135

D.

Drills—planting in.....	18
Deep planting.....	27
Dry fodder.....	77

E.

English dwarf beans.....	40
Egg plant—.....	71
manner of cooking—.....	72
Endive or succory.....	73

F.

Forcing various kinds of vegetables.....	25
Fetticus or corn salad.....	66

G.

Ground—laying out of.....	10
Garden—arrangement of.....	12

	PAGE
Gardening—time to commence.....	24
Green-bugs—destroying of.....	41

H.

Hotbeds	26
Horseradish	74
Hop—method of cultivating.....	83
names of different varieties.....	83
preparation of soil.....	84
cultivation and training.....	85
when and how to pick	86
manner of drying.....	86
manner of bagging.....	87
yield per acre.....	88
medicinal properties of.....	88
stacking the poles.....	89
Herbs—aromatic, pot and sweet.....	139

I.

Insects—repelling of.....	14
Indian corn.....	75
preparation of soil and seeding.....	78
for dry fodder.....	77
how to cure the stalks.....	79
description of illustrations.....	80

J.

Jerusalem artichoke.....	75
--------------------------	----

K.

Kitchen-gardening—remarks on.....	9
Kidney dwarf beans.....	41
Kale or borecole.....	46

L.

	PAGE
Leek	89
Lettuce	90

M.

Manure—how applied.....	12
distribution of.....	20
Means for repelling insects.....	29
Maize for soiling or dry fodder.....	77
Medicinal properties of hops.....	88
Melon—water	92
Melons—forwarding under hand glasses.....	94
Mustard	95
Mushrooms—	95
how to distinguish the good from the poisonous.....	96
forcing of, at all seasons.....	96
how to make the beds.....	97
extremes of temperature should be avoided.....	100

N.

Nasturtium.....	101
-----------------	-----

O.

Okra	102
Onion—	102
when to harvest.....	103
when to sow the seed.....	104

P.

Peat ashes—value of.....	14
Planting in drills.....	18
Planting—deep	27
Parsley.....	104

	PAGE
Parsnip.....	105
Pepper.....	107
Peas —.....	107
forcing of in hotbeds.....	108
Potato—.....	109
how to raise large crops of.....	111
forcing of in hotbeds.....	114
ground-marker.....	115
planter, True's.....	116
digger, Hill's.....	118
sweet.....	119
Pumpkin.....	120
Pot, aromatic and sweet herbs.....	139
Plants—cultivated for medicinal and other purposes.....	141

R.

Radish —.....	121
forwarding of.....	122
Rocamboles.....	123
Rhubarb—.....	123
forwarding of.....	126

S.

Saltpetre as a fertilizer.....	13
Soils—improving of.....	13
preparation of.....	15
Seed and seeding.....	17
Seeds—vitality of.....	21
Stone fruit—seeds of.....	22
Seeds—causes of failure in their germination.....	22
quantity of.....	23
Soils—adapting plants to.....	27
Salad —corn.....	66
Succory or endive.....	73
Soiling—maize for.....	77
Sturton.....	101
Sweet potatoes.....	119
Salsify.....	126

	PAGE
Scorzonera.....	127
Sea kale.....	128
Skirret.....	130
Shallot.....	131
Spinach or spinage.....	131
Squash —.....	133
how to exterminate the grub.....	134

T.

Table showing the number of plants on an acre.....	20
Time to commence gardening.....	24
Tomato—.....	134
manner of preserving.....	135
Turnips.....	136
Turnip-fly—repelling of.....	138

V.

Vegetables—forcing of various kinds.....	25
Varieties of artichoke—.....	32
asparagus.....	35
Vegetables—forcing of.....	142

Y.

Young plants—arrangement of.....	36
----------------------------------	----

